AMERICAN

RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, *Editor.*

ASSISTANT EDITORS:

JAMES T. HODGE, *For Mining and Metallurgy.*
CHARLES T. JAMES, *For Manufactures and the Mechanic Arts.*
M. BUTT HEWSON, *For Civil Engineering.*

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NEW-YORK:

PUBLISHED WEEKLY, BY

JOHN H. SCHULTZ & CO.

Room 12, Third Floor,

No. 136 Nassau Street.

IRON BRIDGES, BRIDGE & ROOF BOLTS, etc. STARKS & PRUYN, of Albany, New York, having at great expense established a manufactory with every facility of Machinery for Manufacturing Iron Bridges, Bridge and Roof Bolts, together with all kinds of the larger sizes of Screw Bolts, Iron Railings, Steam Boilers, and every description of Wrought Iron Work, are prepared to furnish to order, on the shortest notice, any of the above branches, of the very best of American Refined Iron, and at the lowest rates.

During the past year, S. & P. have furnished several Iron Bridges for the Erie Canal, Albany Basin, etc. —and a large amount of Railroad Bridge Bolts, all of which have given the most perfect satisfaction.

They are permitted to refer to the following gentlemen:

Charles Cook, Nelson J. Beach, Jacob Hinds,	Canal Commissioners of the State of New York.
Willard Smith, Esq.,	Engineer of the Bridges for the Albany Basin.
Messrs. Stone & Harris,	Railroad Bridge Builders, Springfield, Mass.
Mr. Wm. Howe,	Engineer & Bridge Builder, Utica, N. Y.
Mr. S. Whipple,	

January 1, 1849.

TO RAILROAD COMPANIES AND BUILDERS OF MARINE AND LOCOMOTIVE ENGINES AND BOILERS.

PASCAL IRON WORKS.

WELDED WROUGHT IRON TUBES

From 4 inches to ¾ in calibre and 2 to 12 feet long, capable of sustaining pressure from 400 to 2500 lbs. per square inch, with Stop Cocks, T's, L's, and other fixtures to suit, fitting together, with screw joints, suitable for STEAM, WATER, GAS, and for LOCOMOTIVE and other STEAM BOILER FLUES.

Manufactured and for sale by
MORRIS, TASKER & MORRIS.
Warehouse S. E. Corner of Third & Walnut Streets,
PHILADELPHIA.

To Railroad Companies, etc.

The undersigned has at last succeeded in constructing and securing by letters patent, a Spring Pad-lock which is secure, and cannot be knocked open with a stick, like other spring locks, and therefore particularly useful for locking Cars, and Swliches, etc.

Companies that are in want of a good Pad-lock, can have open samples sent them that they may examine and judge for themselves, by sending their address to

C. LIEBRICH,
46 South 8th St., Philadelphia.

November 3, 1849. 6m*

Mattewan Machine Works.

THE Mattewan Company have added to their Machine Works an extensive LOCOMOTIVE ENGINE department, and are prepared to execute orders for *Locomotive Engines* of every size and pattern—also *Tenders, Wheels, Axles*, and other railroad machinery, to which they ask the attention of those who wish such articles, before they purchase elsewhere.

STATIONARY ENGINES, BOILERS, ETC., Of any required size or pattern, arranged for driving *Cotton, Woollen, or other Mills*, can be had on favorable terms, and at short notice.

COTTON AND WOOLLEN MACHINERY, Of every description, embodying all the modern improvements, second in quality to none in this or any other country, made to order.

MILL GEARING,
Of every description, may be had at short notice, as this company has probably the most extensive assortment of patterns in this line, in any section of the country, and are constantly adding to them.

TOOLS,
Turning Lathes, Slabbing, Planing, Cutting and *Drilling Machines*, of the most approved patterns, together with all other tools required in machine shops, may be had at the Mattewan Company's Shops, Fishkill Landing, or at 66 Beaver street, New York.

WM. B. LEONARD, *Agent.*

RAILROAD India-rubber Springs.

IF any Railroad Company or other party desires it, the NEW ENGLAND CAR COMPANY will furnish India-rubber Car Springs made in the form of washers, with metalic plates interposed between the layers, or in any other form in which they can be made; in all cases guaranteeing the right to use the same against any and all other pretended rights or claims whatsoever.

F. M. Ray, 98 Broadway, New York.
E. CRANE, 99 State Street, Boston.
1849.

MACHINE WORKS OF ROGERS KETCHUM & GROSVENOR, *Patterson, N. J.* The undersigned receive orders for the following articles manufactured by them of the most superior description in every particular. Their works being extensive, and the number of hands employed being large, they are enabled to execute both large and small orders with promptness and dispatch.

Railroad Work.—Locomotive Steam Engines and Tenders; Driving and other Locomotive Wheels, Axles Springs and Flange Tires; Car Wheels of Cast Iron a variety of patterns and chills; Car Wheels of Cast Iron with wrought tires; Axles of best American refined iron; springs; boxes and bolts for cars.

Cotton, Wool and Flax Machinery of all descriptions and of the most improved patterns, style and workmanship.

Mill gearing and millwright work generally, hydraulic and other presses; press screws; callenders; lathes and tools of all kinds; iron and brass castings of all descriptions.

ROGERS, KETCHUM & GROSVENOR,
Patterson, N.J. or 74 Broadway. New York.

THE NEWCASTLE MANUFACTURING Co. continue to furnish at the Works, situated in the town of Newcastle, Del., Locomotive and other steam engines, Jack Screws, Wrought Iron Work and Brass and Iron Castings, of all kinds connected with Steamboats. Railroads, etc.; Mill Gearing of every description; Cast Wheels (chilled) of any pattern and size, with Axles fitted, also with wrought tires, Springs, Boxes and bolts for Cars; Driving and other wheels for Locomotives.

The works being on an extensive scale, all orders will be executed with promptness and despatch. Communications addressed to Mr. William H. Dobbs, Superintendent, will meet with immediate attention.

ANDREW C. GRAY,
President of the Newcastle Manuf. Co.

DEAN, PACKARD & MILLS,

MANUFACTURERS OF ALL KINDS OF

RAILROAD CARS,

SUCH AS

PASSENGER, FREIGHT AND CRANK CARS

— ALSO —

SNOW PLOUGHS AND ENGINE TENDERS OF VARIOUS KINDS.

CAR WHEELS and AXLES fitted and furnished at short notice; also, STEEL SPRINGS of various kinds; and

SHAFTING FOR FACTORIES.

☞ *The above may be had at order at our Car Factory*

REUEL DEAN,
ELIJAH PACKARD,
ISAAC MILLS,
} SPRINGFIELD, MASS.

1y48

Iron Safes.

FIRE and Thief-proof Iron Safes, for Merchants, Banks and Jewelers use. The subscriber manufactures and has constantly on hand, a large assortment of Iron Safes, of the most approved construction, which he offers at much lower rates than any other manufacturer. These Safes are made of the strongest materials, in the best manner, and warranted entirely fire proof and free from dampness. Western merchants and the public generally are invited to call and examine them at the store of E. Corning & Co., sole agents, John Townsend, Esq., or at the manufactory.

Each safe furnished with a thief-detector lock, of the best construction.

Other makers' Safes repaired, and new Keys and Locks furnished at the shortest notice.

H. W. COVERT
cor. Steuben and Water sts. Albany

August 24, 1848.

PHILADELPHIA CAR MANUFACTORY,

CORNER SCHUYLKILL 2D AND HAMILTON STS.,
SPRING GARDEN, PHILADELPHIA CO., PA.

Kimball & Gorton,

Having recently constructed the above works, are prepared to construct at short notice all kinds of

RAILROAD CARS, Viz:

Passenger Cars of all classes—Open and Covered Freight and Express Cars—Coal Cars—Hand Cars & Trucks of all descriptions.

They are also prepared to furnish Chilled Wheels of any pattern. Car Wheels & Axles fitted and furnished. Snow Ploughs and Tenders made to order. Steel and other Springs always on hand.

All orders will be filled at short notice, and upon as good terms as at any other establishment in the country.

Omnibuses from the Exchange run within one square of the manufactory every 10 minutes during the day.

Philadelphia, June 16, 1849. 1y25

Patent Self-clinching Railroad Spikes.

These spikes have been in use upon various roads for several years, and have met with universal approval by Engineers. They drive in the manner shown, turning themselves, and are therefore not liable to work loose. They will prove of great value to secure the chair.

We are also manufacturing railroad spikes, hook and flat head; wrought chairs, clamps, etc., of superior quality, and are prepared to contract for any pattern or weight upon favorable terms.

SMITH & TYSON,
25 South Charles st., Baltimore Md.

P. H. Griffin,

Corner of Steuben and James Sts. Albany, N.Y.

CONTINUES to manufacture copper flues for locomotive boilers, brewers' coppers, stills, tanner heaters, etc. Copper work in general, at the shortest notice. He has constantly on hand brass cocks, brass valves, copper pumps of every variety.

Orders promptly attended to. 1y14

Patent India Rubber Steam Packing.

THIS article, made by the subscriber, who alone is authorised to make it, is warranted to stand as high a degree of heat *as any that has been or can be made by any person*—and is the article which has made the reputation of India Rubber Steam Packing and the demand therefor. A large assortment of all thicknesses requisite for any description of engines, steam pipes, valves, etc., constantly on hand and for sale by the manufacturer and patentee, who will give every information regarding its properties, mode of use, etc. at the warehouse. JOHN GREACHEN, JR.,
98 Broadway, opposite Trinity Church.

New York, October, 1849.

Fire Brick.

THE Subscribers have constantly on hand Rafford's Stourbridge, Oak Farms Stourbridge, Lister, Wortley, Red and White Welsh Fire Bricks, common and fancy shapes. Also,

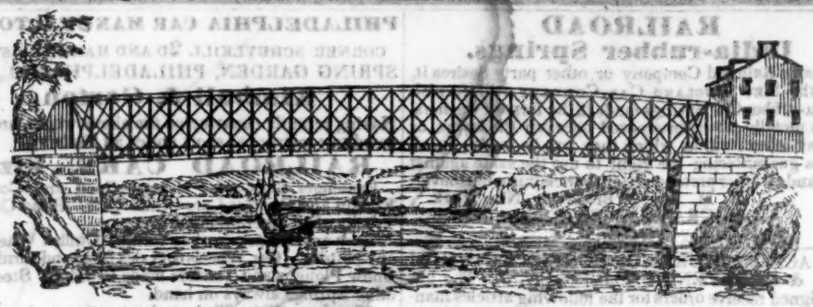
ROOFING SLATES,
from the best Welch quarries, and of all sizes. Also

COAL,
of all kinds—Liverpool Orrell and Cannel, Scotch, New Castle, Pictou, Sidney, Cumberland, Virginia, and all kinds of Anthracite coals. Also,

Pig Iron, Salt, etc., etc., for sale at the lowest market price. Apply to

SAMUEL THOMPSON & NEPHEW,
275 Pearl and 43 Gold Sts., New York.

November, 23, 1849.



NEW YORK IRON BRIDGE COMPANY.

The Bridges manufactured by this Company having been fully tested on different Railroads, by constant use for more than two years, and found to answer the full expectations of their most sanguine friends, are offered to the public with the utmost confidence as to their great utility over any other Bridge now known.

The plan of this Bridge is to use the iron so as to obtain its greatest longitudinal strength, and at the same time it is so arranged as to secure the combined principles of the *Arch, Suspension and Triangle*, all under such controlling power as causes each to act in the most perfect and secure manner, and at the same time impart its greatest strength to the whole work.

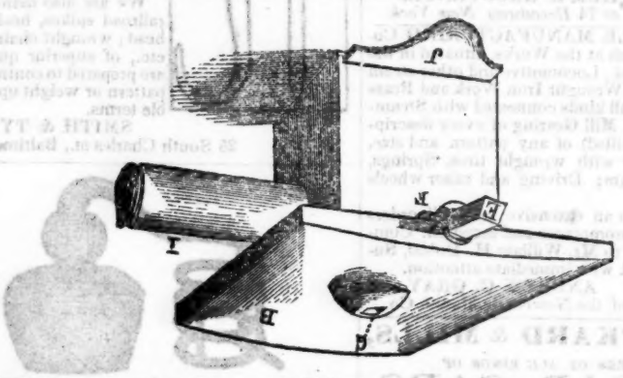
THE NEW YORK IRON BRIDGE COMPANY are prepared to furnish large quantities of Iron Bridging for Railroad or other purposes, at short notice, and at moderate prices.

Models, and pamphlets giving full descriptions of the above BRIDGE, with certificates based on actual trial from undoubted sources, will be found at the office of the Company, 39 Jauncey Court, Wall st., or of W. RIDER & BROTHERS, 19 *Nassau Street*, where terms of contract will be made known, and where orders are solicited.

M. M. WHITE,
Agent for the Company.

August 29, 1849.

E. Harris' Patent Rotary Blacksmith Tuyere.



LETTERS Patent were issued January 9, 1849, to E. HARRIS, of Springfield, for an Improved Rotary Blacksmith Tuyere. Since that time there have been some hundreds put in operation, giving satisfaction and full proof of superiority over all others.

This Tuyere is so arranged that by one movement it can be changed from the largest work to the smallest; at the same time the fire is changed in proportion, thereby making a great saving in coal. Words cannot convey the full merits of this Tuyere; nor is it deemed necessary to speak in disparagement of other Tuyeres, as every smith is capable of judging for himself, and will give merit where merit is due.

I will simply say that there has not been a single instance where I have had my Tuyere put in use but it has given full satisfaction, and is recommended by all who have used them, as being superior to any other ever introduced. I would invite all to give them a trial; and the names of those using them being given, I hope it may induce others to try them—they recommend themselves.

Western Railroad Shop,	Springfield,	Mass.
" "	Pittsfield,	"
Connecticut val."	Springfield	"
" "	N. Hampton	"
Hartford "	Hartford,	Conn.
New Haven "	New Haven	"
Norwich and Worcester,	Norwich	"
N. York and N. Haven,	New Haven	"
Saratoga and Whitehall,	Saratoga,	N. Y.
Vermont Central,		
Hudson and Berkshire,	Hudson,	
L. Kingsley,	Canton,	Mass.
Hadley Falls Co.	Ireland, W. Springfield,	Mass.
Sidney Patch,	Boston,	"
Ames Manuf. Cor.,	Chickopee,	"
American Machine w'ks,	Springfield	"
Dean, Packard & Mills	"	"
G. Frank Bradley,	N. Haven,	Conn.
Andrew Baird,	"	"
Collis & Lawrence	"	"
Slate & Brown,	Windsor Locks,	
Gage,	Nashua,	N. H.
Machine shop,	Manchester,	"
Louis F. Lanney,	Baltimore,	Md.
J. H. Baerdid,	179 Chambers st.	N. Y.
J. Fanning	Rochester,	"
G. W. Hunt	41 Gold st.	"
Chamberlain & Waldo,		"
P. S. Burges, carriage maker,		"
Samuel Miller,		"
J. Leggett,	Steverson falls,	"
J. E. Harris,	Hillsdale,	"
John L. Graham,	Albany,	"
David Dalsell,	South Egremont,	Mass.
Roys & Wilcock,	Berlin,	Conn.

Agents for the sale of Tuyeres:
B. B. Stevens in New York and Connecticut.
A. J. VanAllen has the Agency for the Western and Southern States, and is now travelling through those States. Any communication addressed to the patentee will receive prompt attention.

E. HARRIS, Patentee,
Springfield, Mass.

November 23, 1849.

Railroad Lanterns.

COPPER and Iron Lanterns for Railroad Engines, fitted with heavy silver plated Parabolic Reflectors of the most approved construction, and Solar Argand Lamps; manufactured by

HENRY N. HOOPER & CO.,
No. 24 Commercial St. Boston.

August, 16, 1849. 6m33

Gas Fixtures.

FIXTURES for Burning Gas for Lighting Public Buildings, Private Dwellings, Stores and Factories, manufactured by the subscriber in great variety. Orders by Mail, or left at the Factory on Causeway street, will be promptly attended to.

HENRY N. HOOPER & CO.

Boston, March 23, 1850. 6m13

F. M. Ray's Patent India-rubber Car Springs.

India-rubber Springs for Railroad Cars were first introduced into use, about two years since, by the inventor. The New England Car Company, now possesses the exclusive right to use, and apply them for this purpose in the United States. It is the only concern that has tested their value by actual experiment, and in all arguments in favor of them, drawn from experience of their use, are in those cases where they have been furnished by this company. It has furnished every spring in use upon the Boston and Worcester road, and, in fact, it has furnished all the springs ever used in this country, with one or two exceptions, where they have been furnished in violation of the rights of this company; and those using them have been legally proceeded against for their use, *as will invariably be done in every case of such violation.*

The Spring formed by alternate layers of India-rubber discs and metal plates, which Mr. Fuller claims to be his invention, was invented by Mr. Ray in 1844.—In proof of which we give the deposition of Osgood Bradley, of the firm of Bradley & Rice, of Worcester, Mass., car manufacturers, and men of the highest respectability. In this deposition, in relation to the right of parties to use these springs, he says:

"I have known Mr. Ray since 1835. In the last of May or the commencement of June, 1844, he was at my establishment, making draft of car trucks. He staid there until about the first of July, and left and went to New York. Was gone some 8 or 10 days, and returned to Worcester. He then on his return said he had a spring that would put iron and steel springs into the shade. Said he would show it to me in a day or two. He showed it to me some two or three days afterwards. It was a block of wood with a hole in it. In the hole he had three pieces of India-rubber, with iron washers between them, such as are used under the nuts of cars. Those were put on to a spindle running through them, which worked in the hole. The model now exhibited is similar to the one shown him by Ray. After the model had been put into a vice, witness said that he might as well make a spring of putty. Ray then said that he meant to use a different kind of rubber, and referred to the use of *Goodyear's Metallic Rubber*, and that a good spring would grow out of it." There are many other depositions to the same effect.

The history of the invention of these springs, together with these depositions, proving the priority of the invention of Mr. Ray, will be furnished to all interested at their office in New York.

This company is not confined to any particular form in the manufacture of their springs. They have applied them in various ways, and they warrant all they sell.

The above cut represents precisely the manner in which the springs were applied to the cars on the Boston and Worcester road, of which Mr. Hale, President of this road speaks, and to which Mr. Knevitt refers in his advertisement. Mr. Hale immediately corrected his mistake in the article quoted by Mr. Knevitt, as will be seen by the following from his paper of June 8, 1848. He says:

INDIA-RUBBER SPRINGS FOR RAILROAD CARS.—"In our paper yesterday, we called attention to what promises to be a very useful invention, consisting of the application of a manufacture of India-rubber to the construction of springs for railroad cars. Our object was to aid in making known to the public, what appeared to us the valuable properties of the invention, as they had been exhibited on trial, on one of the passenger cars of the Boston and Worcester railroad. As to the origin of the invention we had no particular knowledge, but we had been informed that it was the same which had been introduced in England, and which had been subsequently patented in this country; and, we were led to suppose that the manufacturers who have so successfully applied this material, in the case to which we referred had become possessed of the right to use that patent. It will be seen from the following communication, addressed to us by a member of the company, by which the Worcester railroad was supplied with the article upon which our remarks were based, that we were in an error, and that the springs here introduced are an American invention, as well as an American manufacture. How far the English invention may differ from it we have had no opportunity of judging."

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ASSISTANT EDITORS,

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American Railroad Journal.

PUBLISHED BY J. H. SCHULTZ & CO., 136 NASSAU ST.

Saturday, September 7, 1850.

Railroad Law of New Hampshire.

AN ACT IN AMENDMENT OF THE LAWS IN RELATION TO RAILROAD CORPORATIONS.

SEC. 1. *Be it enacted by the Senate and House of Representatives in General Court convened,* That no person shall be allowed to pass or be carried over any railroad in this state without first paying the customary fare, excepting the stockholders going to and returning from the annual or any special meeting of said railroad corporation; the directors, treasurer and clerk of said company on their own road, the superintendent and conductor of such road and such other roads as shall have a business connection and contract with such road, persons actually engaged in running the cars, in charge of baggage or in repairing the road, or persons in charge of freight forwarded by express, in pursuance of a contract with the corporation, or in charge of the mail, or accompanying their own freight on a freight train. Provided, however, that if any person shall apply to the president, superintendent, conductor, or ticket master of any road for permission to pass free, and it shall appear that such person is poor or in misfortune, and unable to pay the usual fare; and that it is necessary such person should pass over the road, it shall be lawful for such president, superintendent, conductor, or ticket master to give such person a written permit to pass free over such road, and such permit may include the wife and the children of such poor person. A record of all such permits shall be made by the person giving the same, which shall at all times be open to the inspection of the stockholders, and a return thereof made at the annual meeting.

SEC. 2. It shall be the duty of the conductor on each railroad, immediately after the cars start on their road, to examine the tickets of the passengers to ascertain if all have purchased tickets, and examine the tickets of all persons entering the cars by the way, and if any person who is not hereby excepted is found who has no ticket, to require such person forthwith to pay the usual fare over such road, or such part of it as the person proposes to travel, and in case of neglect or refusal to pay, it shall be the duty of the conductor to cause the train to be stopped, and the the person or persons so neglecting or refusing to pay to leave the train, and in case of refusal it shall be lawful for said conductor to use such force as may be necessary to remove such person from the train, and the conductor shall have the same power to command assistance in removing such person as sheriffs by law have when serving process, and under the same penalty in case of refusal. Any person refusing to pay the fare, and refusing to leave the train as aforesaid, shall be liable to a fine of ten dollars.

SEC. 3. Any conductor who shall refuse to perform the duties required of him by this act, or any president, director, superintendent, ticket master, or conductor who shall pass or knowingly allow any person to pass or be carried over their road, or furnish any person with a ticket to pass over their road in violation of the first section of this act, shall be punished by fine not less than ten dollars, nor more than one hundred dollars.

SEC. 4. Every railroad corporation in this state shall, in the month of August in each year, agree upon and fix their rate of tariffs of toll for the transportation of freight and passengers over their road. The toll shall be rated by the mile for each passenger, and by the ton per mile on freight, except timber, lumber, bark and wood, which may be rated by the thousand feet, or by the cord per mile. Such corporation shall, on the first day of September in each year, post up at all the stations and depots on their road, a copy of such rates or tariffs of tolls, and shall cause said copy to remain so posted thro' the year. They shall also post up a statement of the whole cost of freight per ton, thousand or cord, and the fare of each passenger over their road between the several stations on their own road, and between the stations on their own road and other roads for which they assume to execute any agency or joint contract, whether within or without this state. Such corporation shall not for one year after the rates of toll are posted as aforesaid, or until after sixty days notice has been given, charge or receive any higher rates of toll, fare, or freight than shall be fixed upon and posted as aforesaid.

SEC. 5. Every railroad corporation in this state shall make and maintain all necessary cattle guards cattle passes, and farm crossings, for the convenience and safety of the land owners along the line of their road, and in case the corporation and land owner cannot agree upon the place, number, or manner in which such guards, passes, or crossings should be constructed, the land owner may by petition apply to three disinterested justices of the peace, two of whom shall be the quorum, neither of whom shall be resident in the same town with the applicant, or who shall have been previously advised with by the petitioners in relation to the matter to be submitted, who shall notify the parties by giving each at least fifteen days' notice in writing of the time and place they will meet to consider said petition, and shall examine and determine the place or places where such passes, guards, or farm crossings, and the time in which the same shall be constructed, and make a report thereof in writing, and file a copy of their report with the town clerk of the town where such land is situated; and in case the corporation shall refuse or neglect for sixty days after the report is filed as aforesaid, and after the time fixed for building the same by said justices, to construct passes, guards, and crossings, agreeably to the report made as aforesaid, they shall be liable to a fine of five hundred dollars, and a fine of one hundred for each month they shall refuse or neglect to construct the same, after the expiration of the said sixty days. Provided, that the said justices to whom said land owner shall apply as aforesaid shall be selected as follows:—One by the land owner, one by the railroad corporation, and the third by the two first, selected as aforesaid; and if said railroad corporation shall refuse to select one of said justices, it shall be the duty of the selectmen of the town in which the land is situated to name the person in behalf of said corporation.—Provided, however, that the provisions of this section shall not apply in any case where the corporation have settled with the land owner in relation to such guards, passes, and farm crossings.

SEC. 6. That whenever any railroad company shall unreasonably neglect or refuse to establish reasonable and proper depots or stopping places for the public accommodation after being thereto requested, the persons aggrieved thereby may by petition represent their said grievance to the Governor, who shall refer the same to the railroad commissioners, and if said commissioners shall, after hearing the several parties, be of opinion that such railroad company have unreasonably neglected or refused to establish such depots or reasonable or proper stopping places, they shall in writing declare what such railroad company ought to do in the premises, and fix and order the time when the

same shall be done, and make their return to the Secretary of State; and if said company shall neglect or refuse to comply with such order they shall forfeit the sum of one hundred dollars for each and every month's neglect, to any petitioner for such accommodation who may sue for the same. The fees of said commissioners and other reasonable expenses of the petitioners shall be taxed by said commissioners, and in cases where they determine that such railroad company have thus neglected and refused to make such necessary accommodation for the public, the same shall be paid by such company, and may be recovered in the name of such petitioners by action for money laid out and expended.

Sec. 7. If the life of any person not in the employment of the corporation shall be lost by reason of the negligence or carelessness of the proprietor or proprietors of any railroad, or by the unfitness or gross negligence, or by the carelessness of their servants or agents in this state, such proprietor or proprietors shall be liable to a fine not exceeding five thousand dollars nor less than five hundred dollars, to be recovered by indictment to the use of the executor or administor of the deceased person, for the benefit of his widow and heirs, one moity thereof to go to the widow and the other to the children of the deceased; but if there shall be no children, the whole shall go to the widow, and if no widow, to his heirs, according to the law regulating the distribution of intestate personal estate among heirs.

Sec. 8. No contract between two or more railroad corporations for the use of their roads shall be legal or binding on either party unless such contract shall be sanctioned in writing by the railroad commissioners and approved by the Governor and Council. And in no case shall such contract be for a longer term than five years, and no such use of another road shall be allowed unless by contract in writing executed by both parties, and a copy filed with the Secretary of State.

Sec. 9. The treasurer and clerk of any railroad corporation in the state, except such whose road is connected with a railroad in some other state by the acts of two or more states, shall reside within this state, and all the books, papers, and funds of said corporation, with the foregoing exceptions, shall be kept therein, or shall provide for the payment of all dividends to the stockholders in this state at the place of business of the corporation in this state.

Sec. 10. The directors of every railroad corporation shall from year to year make report to the Legislature, under oath, of their acts and doings, receipts and expenditures under the provisions of their charter, which report shall be made in the month of May in each year, and shall contain full information upon the several items hereafter enumerated, to wit:—

Return of the capital stock; increase of capital since last report; capital paid in per last report; capital paid in since last report; total amount of capital stock paid in; funded debt per last report; funded debt paid since last report; funded debt, increase of, since last report; total present amount of funded debt; floating debt per last report; floating debt paid since last report; floating debt, increase of since last report; total present amount of floating debt; average rate of interest per annum paid during the year; maximum amount of debt for each month during the year, viz:

January, February, March, April, May, June, July, August, September, October, November, and December.

Cost of Road and Equipment.—For graduation and masonry per last report; for graduation and masonry paid during the past year; total amount expended for graduation and masonry; for wooden bridges per last report; for wooden bridges paid during the past year; total amount expended for wooden bridges; for superstructure, including iron, per last report; for superstructure, including iron, paid during the past year; total amount expended for superstructure, including iron; for stations, buildings, and fixtures, per last report; for stations, buildings, and fixtures paid during the past year; total amount expended for stations, buildings, and fixtures; for land, land damages, and fences per last report; for land, land damages, and fences paid during the past year; total amount expended for land, land damages, and fences; for locomotives per last report; for locomotives paid during the year past; total amount expended for locomotives; for passenger and baggage cars per last report; for passenger and baggage cars paid during the past year; total amount expended for passenger and baggage cars; for merchandise cars per last report; for merchandise cars paid during the past year; total amount expended for merchandise cars; for engineering per last report; for engineering paid during the past year; total amount expended for engineering; for agencies and other expenses paid during the past year; total amount expended for agencies and other expenses; total cost of road and equipment.

Characteristics of Road.—Length of road; length of single main track; length of double main track; length of branches owned by the company, stating whether they have single or double track; aggregate length of sidings and other tracks, excepting main track and branches; weight of rail per yard in main road; weight of rail per yard in branch road, specify the different weights per yard; maximum grade, with its length, in main road; maximum grade with its length, in branch roads; average grade per mile of main road; total rise and fall in the main road; total rise and fall in the branch roads; shortest radius of curvature, with length of curve, in main roads; shortest radius of curvature, with length of curve, in branch roads; total degrees of curvature in main road; total degrees of curvature in branch roads; total length of straight line in main road; total length of straight line in branches; aggregate length of wooden truss bridges; aggregate length of all other wooden bridges; aggregate length of stone and iron bridges; whole length of road unfenced on both sides; namber of public ways crossed at grade; number of railroads crossed at grade; remarks; way stations for express trains; way stations for accommodation trains; flag stations; whole number of way stations; whole number of flag stations.

To be continued.

Probable Future Substitutes for Coal, &c.

We have a confident hope, however—or rather a firm belief—that long before our coal fields are really exhausted, discoveries will be made, both of new motive powers and new sources of heat and caloric, which will make all future generations independant of those clumsy and dingy resources.—Motive power, we think, will probably be supplied, either directly by such omnipresent and inexhaustible elements as electricity and galvanism, or by the employment of some gas, far more elastic than steam, and capable of being called into action, and again condensed by slight mechanical impulses, or by changes of temperature, incalculably less than are now necessary for the management of that comparatively intracticable substance; but, even if we should still require to use steam, we are persuaded that means will bo devised for its generation, or rather for the production of evolution of heat for that and all other purposes far less operose, indirect, and precarious, than the combustion of coal. This may probably be effected without any process of combustion at all; either by the great agents of galvanism or electricity already referred to; or by the friction, hammering, or rolling of solid and practicable indestructible bodies; or by the forcible compression of common air, or of other elastic fluids, or by the chemical combination of different substances; while, if combustion must still be resorted to, might it not be constantly maintained without the tremendous expense of the working and transportation of fuel, by merely contriving a method of burning the inexhaustible, omnipresent, and eternally reproduced element of *hydrogen*, as it exists in the great ocean, and in all our lakes, rivers, fountains, and tanks, and tubs of rain water, with the equally omnipresent, inexhaustible, and constantly reproduced *oxygen* of the circumambient atmosphere. These, we are aware, may now strike many (perhaps most) people as mere Utopean or Laputan facies; and undoubtedly they are, as yet, but vague and general suggestions. But when we consider how much wilder and more audacious (as less warranted by any analogous experience) similar anticipations of electric telegraphs, photographic painting, or railway locomotives, must have appeared but 50 years ago, we really cannot consent to put them in such a category; but, on the contrary, confess to a certain feeling, both of pride and confidence, in thus recording what we cannot but consider as a truly prophetic, though it may be but a dim and somewhat indistinct vision of a good and glory to come.—*Edinburgh Review.*

Oxygen.

Continued from page 546.

The generalising of facts, and the reducing practice into science, is, and should be, the aim of every true philosopher, but we raise our voice against the morbid over-anxiety which leads us to accept a theory upon data that after-experience shows are at least uncertain, if not positively unsound. We cannot object to guesses, provided they are borne in mind as guesses merely, and are not laid down and accepted as demonstrations; but we confess we have but little patience with those teachers who take up a plausible theory, say, "it is," when they should only, "it may be," and for no other reason than that it is the fashion to be dictatorial, and that they hope by these means to pass themselves off for such great wiseacres, that nature's most hidden mysteries are all open to their lack-lustre eyes. They, forsooth, know all about it—"certainly," say they, "it does appear strange to the uninitiated, but just try a dose of our theory, it will so brighten your wits and open your eyes! There, place two marbles—the harder the better—side by side; take care they do not even touch—cry, 'Hey, Presto!' that is our chemical combination." We certainly prefer a child's idea of the manner in which two fluids, as whiskey and water, are said to mix—aad think such a notion of what is admitted to be merely a mixture, coincides much better with the idea of chemical combination, than the lump upon lump theory which has resulted from the prolonged labors of many most ingenious men—whose work, despite their talent and perseverance, we can only regard in the same class as highly elaborate automata, intricate examples of ingenuity misapplied and incomprehensible to all who have not been trained up to the craft. It would almost seem that one of the first principles of morals had been found inapplicable to science, and that, in such a manner, it *was* right to do a little wrong that good might come. Much of the modern chemical theory rests on a good foundation, but is an unfinished superstructure. To have exhibited the incompleteness of the building would have incited others to the task, but alas! it would also have shown the theoriser's ignorance; they have therefore built "castles in the air," whose hollow paper walls awe the multitude by an imposing aspect, and, upon close inspection, present an excellent example of the skill of the contrivers in an elaborate arrangement of patchwork. We do not come prepared with a theory that shall supersede the present one. We know where the shoe piches, and are willing to admit, that we are neither shoemakers nor cobblers, to know how to remedy the defect. We therefore cry out when we are hurt, and are not disposed to agree with those who say, "Do not meddle with what you have got—even if it pinches rather too tight—unless you can produce a better." On the contrary, we think we are really forwarding the cause of truth by saying—"Here is a difficulty, who will help to remove it? Our dissuaders would say—actively or tacitly—"Get away with you! though we are in a mess, yet we would rather continue to be entirely dirty than partially clean." So would not we, but would always take half a loaf when we could not get a whole one, and rather than be without any.

In any inquiry where truth is sought, we hold that doubts, as well as faith, should be discussed. If we cannot arrive at a satisfactory conclusion, let us seek more and clearer evidence; but if we would be honest judges, let us have no decision where the evidence is inconclusive, or the question has not been seen on all sides. Better to say—"We cannot tell," and frankly admit that we do not know that which is hidden, than to say—"This is right," when after proofs may upset our hasty judgment, and posterity point to our sapient selves, exclaiming—"These are our Solon forefathers, who undertook to settle what they did not understand."

We cannot better illustrate the dangers and progress of hypothesis, than by giving the history of oxygen, both when ill treated and stifled by its ri-

val, phlogiston, and when discovered and almost restrangled by Priestley. "What man has done, man may do." So said our schoolmaster; and it will aptly apply as the moral we would wish the following short history to inculcate, if we interpret the phrase in a way our "dominie" did not exactly intend, by saying—"Speculative men have made many mistakes, and speculative men will most probably do so again." In our compilation, we have borrowed freely from the works of Thompson, Brand, Turner, and Fourcroy.

The first idea of the phlogiston theory is ascribed to John Joachim Beccher. He was born at Spires, in Germany, in 1635, and, by a succession of intrigues, was driven from Munich to Vienna, thence to Haerlem, and eventually, in 1680, to Britain, where he examined the Scotch and Cornish mines and smelting, and died after a few years' residence. The development and momenclature of the theory are due to George Earnest Stahl, born at Anspach, 1660, and died 1734. He contributed so greatly to its success, both by his reasoning and experiments, that although it originated with Beccher, yet it was commonly called the Stahlian theory. According to this theory all combustible bodies are compounds, one constituent being set free and dissipated by combustion, the other being fixed and remaining. Those bodies which will not burn were said to have previously undergone combustion. This quicklime possesses properties very similar to the calces of the metals, *i. e.*, the products of their combustion, and it was very naturally supposed to be also a calx, and that, if the matter dissipated during its combustion could be restored, lime would be converted into a metal.—Combustibility was therefore thought to be lependant upon an igneous or fiery principle, or material substance, which was present in every combustible body, and whose separation constituted the phenomenon of combustion. This substance was considered to be absolutely the same in every combustible, their individual peculiarities resulting from the other principle, or number of principles, with which this common fire principle was combined. For this common principle Stahl invented the name Phlogiston, and in proof of the theory he adduced experiments which appeared so decisive and incontrovertible, and were stated with so much force and clearness, that the idea was received almost by acclamation, and the dissentients found themselves in so small a minority, that most lost courage to express their dissatisfaction, and thus tacitly sanctioned its reception. The experimental proofs, and theoretical deductions, were as follows:—When phosphorus is burnt in a glass vessel, the white smoke produced during the combustion is deposited on the glass, and quickly absorbing moisture, deliquesces into an acidulous liquid, known as phosphoric acid. This liquid, placed in a platinum crucible, and gradually heated to redness, parts with the water, and leaves dry phosphoric acid, which is colorless and transparent, like glass. If a quantity of charcoal is mixed with this phosphoric acid, and the whole reheated in a close vessel, a portion, or the whole, of the charcoal will disappear and phosphorus will be found, in every way identical with that burnt in the first instance. The conclusion deduced from this appears to be inevitable—the charcoal had combined with the phosphoric acid, and the union of the two bodies constituted phosphorus. To corroborate their views, the advocates of the phlogiston theory appealed to the action of nearly every inflamable substance. They showed that a similar effect was produced by lampblack, sugar, resin and flesh, and also by the more easily oxidised metals, as zinc, and that in every case the mixture of a combustible with phosphoric acid produced phosphorus. Hence it appeared to be a necessary consequence, that all combustibles possess one common principle, which they communicate to the phosphoric acid; for as the body formed by the action of each combustible is, in all cases, identical, and, moreover, as one combustible produces another—as, in the foregoing instance, charcoal produces phosphorus—therefore the principle communicated by, and necessarily a constituent of, every combustible, must be identical also; and that supposed principle was named phlogiston. The theory was also argued by the aid of all similar phenomena. Sulphur, by burning, is converted into sulphuric acid, and if it is then heated with charcoal, sulphur is reproduced. Who could deny the inference—that the combustible or phlogisticated substance imparted its phlogiston to the burnt or dephlogisticated substance or material and thus reproduced the original phlogisticated compound? Again: tin at a red heat becomes converted into a calx. "By this process," said the phlogistians, "the tin becomes dephlogisticated, and when we wish to reproduce the metal, we have only to add phlogiston to the calx which has been deprived of it. This we do by heating it with any combustible body; and it is indifferent whether we use wood, peat, coal, charcoal, leather, hair, sugar, flour, horn, &c., all will equally reproduce the tin, and must therefore all communicate the same substance to it—that substance is phlogiston." But there was a difficulty in the way, and though it appeared to be the only one, yet it finally overthrew the theory; and it is remarkable, that the fact which formed the wrecking rock, should have been observed and recorded many years before the well-pleaded theory had been framed.

In 1630, Jean Rey, a physician at Bugue, in Perigord, France, published his investigation of a circumstance referred to him by Le Brun, who found that 2 lbs. 6 oz. of tin, kept at an elevated temperature for six hours, had passed into the state of calx, and then weighed 3 lbs. 1 oz.; that is, dephlogisticated or burnt tin is *heavier* than phlogisticated or unburnt metallic tin. Rey thus sums up the result of his labors:—"To this question, then, supported on the grounds already mentioned, I answer, and maintain with confidence, that the increase of weight arises from the air which is condensed—rendered heavy and adhesive, by the violent and long-continued heat of the furnace. This air mixes itself with the calx—frequent agitation conducing—and attaches itself to the minutest molecules, in the same manner as water renders heavy sand which is agitated with it, and moistens and adheres to the smallest grains. This difficulty—the increase of weight consequent upon *dephlogistication*—was met by assigning a peculiar property to phlogiston. It was supposed to be not only destitute of weight, but absolutely endowed with the property of levity. A body containing phlogiston was said to be lighter than it otherwise would be, and became heavier when the phlogiston made its escape. Thus, the increase of weight in the calcined tin was not owing to the fixation of air, but to the escape of phlogiston—in other words, of so much lightness. This sophism of the phlogistonic chemists upon the property of levity, is only equalled by the speculation of a very sanguine inventor, who, instead of considering the *comparative* lighness of hydrogen—the lightest substance known, the gas frequently used for filling balloons—ascribed it, after the same logical manner, to the innate property of levity, and in sober earnest, proposed to condense a balloonful into a vessel to be contained in his hat, which, when thus endowed with all the *levitating* powers of the balloon, was to be strapped to his shoulders. Thus equipped, off he was to fly—we suppose—to Gulliver's Island of Laputa, the happy abode of tremendous geniuses, where he was to be met by his near relation, who would condense into his snuff box sufficient air to float him conveniently on the water, put his box in his waistcoat pocket, "walk the waters like a thing of life," and feed during the voyage upon "*the quintessence of dinner lozenges*" commodiously packed in a pill box. It must be remembered, that upon this circumstance, the increase of weight by combustion, rests the proof of the part performed by oxygen. If charcoal combined with phosphoric acid to form phosphorus, the phosphorus should in such an event weigh as much as the united weights of the charcoal and acid. This is not found to be the case, but, on the contrary, it is considerably lighter. It is also ascertained, that when charcoal and phosphoric acid are heated together, a gas is evolved—invisible, and therefore very likely to escape notice—which, when collected, is found to weigh as much as the charcoal *and* the weight lost by the phosphoric acid; the loss being also exactly equal to the weight gained by the original combustion of the phosphorus, and its conversion into phosphoric acid. Hence the moderns conclude, that phosphorus, in burning, combines with a gas (oxygen), and therefore becomes just as much heavier as the gas weighs with which it combines. When the acid is heated with charcoal, it is decomposed, the oxogen unites with the charcoal to form an oxide of carbon—also a gas—and the phosphorus remains, of the same nature, quantity, and weight as before combustion. So far as this goes, we think it clearly proved; and much as we may be inclined to doubt, in this instance we can scarcely agree with Abraham Tucker, as quoted by Bulwer in the Caxtons, though—like many other advice-givers, who recommend more than they appropriate—we think his works are worthy of the best consideration of all strongly-opiniated persons: "Well persuaded as I am that two and two make four, if I were to meet with a person of credit, candor, and understanding, who should sincerely call it in question, I would give him a hearing; for I am not more certain of that than of the whole being greater than a part, and yet I could myself suggest *some considerations that might seem to controvert this point.*" One grave objection to the modern theory is the absence of all recognition of heat, light and electricity, as *essentials* in the various phenomena. They are always present, and frequently are obviously necessary; can it then be possible for that theory to be correct which barely recognizes their existence? We think not; and our own inability to frame a theory which, in strict accordance with facts, shall embrace the whole of these phenomena, does not prevent our acknowledgement of ignorance, but most certainly will enhance our gratitude to him who can grasp the subject with such a master hand as to discover and lay bare the wondrous laws by which nature rules the endless combinations of the material world.—Our gratitude is also due to every one who advances us a single step towards truth. We honor the recorder of a simple fact, especially if it be opposed to a favorite theory; and therefore shall first enumerate some of those who, though in the merest twilight of theory, were yet content to curb their imaginations by the evidence of their senses, and who practised the philosophic precept—"facts not fictions." We shall then speak of oxygen and its discovery, and conclude with a short notice of the architect of much of the modern theory of combustion and acidification.—*Prac. Mech. Journal.*

On Determining the Capacity of Vessels.

Mr. Peck, naval constructor at Charlestown, Mass., has discovered an ingenious mode of determining the capacity of vessels; and its approximation to the actual displacement of government and ordinary freighting ships renders it valuable; its ready application to such vessels as have had their displacement calculated, will enable the reader to test its accuracy. Adapted, as it is, to almost all descriptions of freighting vessels; very sharp vessels, and particularly our sharpest ocean steamers, are exceptions to the general rule, having a smaller displacement than the rule would give, owing to their having no dead rise, and an easy bilge. The rule is as follows: From 90° deduct the angle of the floor, or the degrees of dead rise; .0075 the quotient is the decimal of capacity—multiply the length by the breadth, and that product by the depth, from the bottom of the garboard to load-line, and the last product by the decimal of capacity, and divide by by 35, the quotient in tons. Thus assuming a ship to be 160 feet long, 35 feet feet wide, and from the bottom of the garboard to load-line, 14 feet deep, with four degrees of dead rise, we have—

Decimal of capacity.	Lgh. Bth.	Depth.
$90° = 86° \times .0075 = .645$	$160 \times 35 =$	5600×14

Exponent.	Cubic feet per ton.	
$= 78400 \times .645 =$	$50568 \div 35 =$	1444 capacity in tons.

The principal, and, perhaps, the only difficulty in applying this rule as a standard of measurement, is its liability to evasion (which is the most objectionable feature in the present law.) The load-line could not be marked a proportionate distance from the base line, or from the plank-shear, without exposing the law to the same amount of infractions the present one is. But as a ready rule for general reference and approximating the truth, Mr. Pook's rule is, doubtless, without a rival. After the actual displacemont has been found, a very

convenient method of obtaining the capacity will be found in the following: Multply the length between perpendiculars by the breadth, that product by the depth from base to load-line, this last product divided into the whole displacement, and the quotient will furnish the exponent of the ratio of capacity, and will apply equally well to all descriptions of vessels.—*Marine and Naval Architecture.*

English Iron Trade.

The usual quarterly meeting of ironmasters took place at the Town Hall, Birmingham, on Thursday, and was more numerously attended than any meeting held for a considerable time past. The depression throughout the past three months has been great, and the workmen and their families have suffered much privation, but a better state of things is now confidently looked forward to. A number of furnaces were set to work during the railway mania, and the large amount of capital invested prevented the curtailment of the manufacture; upon the demand ceasing, a glut was the consequence, with a dimunition in price. Several attempts have been made during the past quarter to effect a reduction below the quotatations of last quarter-day, but without success. At the meeting, all the large firms in Staffordshire and Schropshire were represented, and many buyers from London and Liverpool were present. But few sales were effected, owing to the leading firms refusing to accede to any reduction of price; it being generally admitted that, without a great reduction of wages, which they were not prepared to recommend, forge pig iron could not be made for less than £3 per ton, nor manufactured for less than £6. Reports from Wales and Scotland were rumored, stating that in those localities prices were receding, but it would be folly for the manufacturers of South Staffordshire to attempt to compete with them in prices, while they beat them in quality. To meet the present condition of the trade, 20 furnaces have been blown out during the past three weeks; 2000 tons a week less than the usual supply will be thus produced, and the stocks lessened. Some sales were negotiated before the close of the meeting at £5 10s. to £5 15. for bar, and £2 10s. to £2 15s. for pig—prices, at present wages, not considered remunerative. Rod and sheet iron brought £8 per ton. A general opinion prevailed that things had reached the worst, and we are glad to state that the accounts were all satisfactorily settled.

The quarterly meeting at Wolverhampton was held on Wednesday, but nothing of importance transpired, as the masters were waiting for the larger meeting at Birmingham. Few orders were given, but many considered that the trade gave indications of greater firmness.—*Min. Jour.*

Noiseless Carriage Wheels and Horse Shoes.

In the *Mining Journal* of July 22, 1848, we noticed the introduction of some improvements in the construction of wheels for carriages, by Mr Andrew Smith, the patentee of the wire-rope machinery, which were likely to prove of much value to the public, as not only adding greatly to comfort in travelling over paved streets, from their being perfectly noiseless, but from their combining a much greater degree of safety. The principle consists in forming the hoop or tire of two separate layers of galvanised iron, which are rivetted together, and re-galvanised in the mass; this division of parts cutting off all vibration when travelling over the roughest stones. Mr. Andrew Smith has also applied the principle to springs, in which each plate is galvanized separately, and can never rust. The axle is also made to fit the axle box with perfect exactness, by a lining of fusible metal, is itself lubricating, and not liable to heat; the whole in conjunction secures a degree of quiet, ease and safety hitherto unattained. We have been led again to notice these ingenious improvements, from the fact that the patentee having produced a noiseless carriage, found that the horses' feet made more noise than ever, and seeking for a remedy has applied the same principle to the horse shoe. This is effected in the most simple manner, by making the shoes in two thicknesses of galvanized metal, then rivetting them together, and re-galvanizing. A horse equipped in these pumps trots over the granite streets of London as softly as if he was on a bowling green.—*Lond. Min. Jour.*

MEMOIR ON THE PHYSICS OF THE MISSISSIPPI RIVER.

By Caleb G. Forshey, C. E.

1. *Rate of Fall.*—From the mouth of the river to a point 400 miles up its tortuous channel,* is a distance in a right line of only 220 miles. Its length is nearly double the right line distance. For 300 miles above New Orleans, it may, for practical purposes, be regarded as twice the distance of the right line.

2. The mean depth of the river at high water mark is not materially different at Natchez, from Carrollton, though near 300 miles apart. A section of the river at Carrollton, made at high water of 1849, is 168,226 square feet; and at Vidalia (opposite Natchez) the section is 167,000 feet. The bottom of an uniform channel 400 miles up, is about on a level with the bar at the southwest pass. The rate of fall is not uniform on the surface, but decreases in declivity towards the gulf, giving a curve of inclination (probably parabolic) to which the gulf level is a tangent, at the Balize. The mean rate of inclination is 1·80 inch per mile, for the first hundred miles, 2·00 inches the second hundred, 2·30 inches for the third, and 2·57 inches for the fourth hundred miles. Above this point I have no accurate data, but am inclined to think that the rate is not materially different, to the upper extreme of the Delta above the mouth of the Ohio.—These data relate to high water.

3. The low water curve of declivity has a mean descent of ·24 inch per mile for the first hundred miles, and ·50, ·83, ·1·20 in. for the next consecutive three hundred miles; making the total difference of level 21·1 feet, from a point ten miles above Natchez, to the Balize.

4. These rates are not uniform for short distances, interrupted as the channel is by many short bends which arrest the current's regular flow, and make a series of comparative levels and falls in the surface current. The *means* obtained are from levels made of segments of the channel, 25, 28, 16, and 100 miles in length, and are, I think, reliable.—They are, at least, the best data within my knowledge.

5. *Depth of Water.*—Within the 400 miles treated, the depth of the river at high water is not materially different. Near Natchez, I found an extreme depth of 188 feet, and a like depth has been found at several points in the vicinity of New Orleans.

One depth of 187 feet was recently found near Shrewsbury, about ten miles above the city. These are extreme cases. When the channel is distant from both shores, 125 feet is the usual maximum. A section made in front of Vidalia, half a mile below the Natchez ferry, gave a mean depth of 80·5 feet, with a maximum of about 130! and a like section of high water chahnel at Carrollton gave a mean depth of 71·6 feet. The low water depth may always be obtained by substracting the range from the high water. At Vidalia, the range is 51 feet; and at Carrollton 15 feet. The mean depth of the low water sections would then be 29·5 feet and 56·6 feet. And the sectional areas at low water give 133,010 square feet for Carrollton, and 108,000 at Vandalia.

6. The channel continues to maintain a great depth, down to a point very near the debouchure. How near, I know not, but certainly beyond the head of the passes. At Port Jackson it is 136 feet deep, and a point midway down the southwest pass was found 102 feet.

7. *Width.*—The uniformity of breadth in the channel is a remarkable feature of the Mississippi rIver. A great number of measurements made by myself, from the Balize to Galena, 1700 miles up the river, give a mean width, including wide places in the bends of about 1000 yards; excluding these 800 yards; and the upper portion of this is wider, including expanses produced by bends and islands, than 1000 yards; but excluding them, they are the same. The addition of the four great rivers below make no increase in the breadth of the river. The Missouri at Booneville, 300 miles above its mouth, I found a half a mile wide.

It appears, from these facts relating to the width of the Mississippi, that it does not follow the law of confluent streams, as given in the books.* We shall have occasion to see that in many other features it is a river *sui generis.*

8. *Velocity of Currents.*—To obtain the surface velocity of the river, I have established parallel sights, transverse to the river, and with an assistant at one of the stations, timed floating drift wood, on still days, at all parts of the surface, estimating by the eye their distance from shore. This I have done at all stages of water, and derived the mean of each set, to the number of many hundreds of observations.†

9. The result shows a mean surface velocity at high water of 2·61 miles per hour, at Carrollton, and 2·60 miles per hour at Vidalia; respectively, 3·80 and 3·82 feet per second of time. The one was derived from 176 observations, and the other from 70 observations. At low water, Carrollton, 1·45 miles per hour, or 2·11 feet per second; at Vidalia, 1·54 miles per hour, or 2·25 feet per second.

10. The mean velocity for mean water, as derived from 30 years' observation, is 2·26 miles per hour, or 2·95 feet per second.

11. The velocities at various depths are not easily obtained. The irregularities of bottom and sides in the channel, and their continually shifting nature, give so many lateral and vertical directions to portions of the current, as very much to equalise the current velocity at all depths. Besides, the largeness of the volume renders friction much less influential than is usually computed for fluents. Accordingly, in sounding, I have found the lead, when thrown in great depths, to be drifted down stream as fast as the boat from which it was thrown, so that my soundings were made vertically, by letting the boat drift while the lead was descending.

I have allowed, with some hesitation, one eighth for retardation from friction, which is 12½ instead of 15 per cent., the rate usually allowed. This is a liberal allowance at high water, but at low water it is small enough, as we shall probably see.

12. It is remarkable that the high water sections at Vidalia and Carrollton, 275 miles apart, should be the same; but much more remarkable, that observations should have given so precisely the same mean velocity, 2·60 and 2·61 miles per hour. This is what should have been expected from observations of the utmost exactness on the hypothesis I assume, that the Atchafalaya, Lafourche, and Plaquemine carry off as much as Red River introduces.

13. *Rise and Fall of the River.*—The range of the river is, at Vidalia, as above stated, 51 feet; at Carrollton 15 feet. These are the extremes not often reached. In 1829 and in 1819 the river was 51 feet below the mark of 1828, and this latter mark is the highest for 30 years, at all known points on the river, up to the year 1849, when the water reached in several places the same point as in '28. In 1815 the water rose at Vandalia two inches higher than in 1828, and was said to be the highest water since 1770. Mr. Hutchings thinks the water mark was made in 1770, which was still visible in his recollection, fully one foot higher than

* As almost all of the material of this memoir was accumulated, prior to the cut-off made at Raccourci bend, the distances are taken round the old channel.

* "Assuming that the Mississippi and Missouri rivers had equal breadth and discharged equal quantities, the breadth of each represented by b and their resultant by b', then $b'=1{\cdot}32\,b$, and the breadth would be increased one-third. But if on the contrary the united rivers should be divided into two equal branches, each of them would have the breadth $b=0{\cdot}76\,b'$, about three fourths of the bed of the undivided river." Stein, Com. Rev., February, 1850.

† It may, and probably will be objected, that floating drift wood is not a reliable index to the current's velocity, because of atmospheric friction and accidental disturbances. Some care was always taken in selecting bodies least liable to these objections, and calm days invariably chosen. The estimated distances too are liable to be erroneous, but when the objects timed are very numerous, the errors arising from estimating distances from shore may be assumed to cancel each other. Let those who have better observations offer them. I pretend only to approximations.

any mark* since reached. Governor Sargeant records this tradition in 1809, when there was a flood higher than for forty years. The accompanying table, or scale L, will show the relative height in different years for forty years, and the date of culmination. These are from a register kept of actual rise and fall for thirty years, and from other sources reliable. The range of high water marks is three feet at Carrollton—1839, April 8th—the highest water of the year being three feet four inches below high water. Low water marks have a much greater range; the lowest mark of 1844 being seven feet above the lowest known.

14. The median line or curve of rise and fall for thirty years, 1817 to 1847, reaches an elevation just one foot seven inches below the mark of 1849.—This is in the last week of April, which proves to be the mean time of highest water. The lowest water by the same mean is on the 1st of October, and is three feet six inches above the lowest mark. It will be observed that this table has been reduced to Carrollton, or 15 feet range in rise and fall; but the dates have not been altered. They should be reckoned a week or ten days later for Carrollton than for Vidalia. The mean height of this line for the whole thirty years is 7,222 feet below highest mark.

15. *Recapitulation.*—We have shown the "rate of fall," depth, breadth, velocity, and rise and fall of the water. From these we may compute the rate of discharge at all stages, and the mean rate for 30 years. And the quantity by these data is 12,250,000,000,000 cubic feet per minute, or 447,199 cubic feet per second.

It is worthy of special observation, that the mean for the three sets of ten years shows a lower level of discharge at each consecutive ten.

16. *Sediment.*—The experiments of Prof. J. L. Riddell show the sediment matter transported by the Mississippi to bear a proportion in bulk to the whole quantity discharged of one to three thousand.† At this rate, the cubic contents would be by my measurements, as above, equal to 4,083,333,333 cubic feet. The sediment, then, would cover twelve miles square one foot deep.

To be continued.

GOLD COINS.

The deterioration in our gold coins has caused considerable conversation of late, in our banking institutions. It is ascertained that the coinage of only a few years date is quite deficient in weight: so much so, that most parcels of $5,000, or less, fall short several dollars. According to the standard, Eagles, Half Eagles, etc., are a legal tender, at a certain specified *weight*, and if they do not weigh the requisite amount, can they be received at the *count?* The difference in weight of a single piece is very trifling, but in the aggregate there is quite a deficiency. This process of deterioration is going on from day to day, and the coins which at this time are of full weight, will in a few months, perhaps, according to the wear, be designated as light coin. We understand the banks in this city have decided to receive gold only at *weight*, which decision, we think, is according to law.

Gold, being more ductile than any other metals of which coins are composed, and more valuable, more care is necessary; and we think the time will come, when the same course will be pursued here as in England. There a Soverign is received at its weight, and American gold must be received in the same manner.

[From the Philadelphia Evening Bulletin.]

GENERAL CONDITION OF THE BANKS OF THE UNITED STATES, JAN. 1, 1850.

States.	Banks	Br'chs	Capital.	Loans and discounts.	Stocks.	Real estate.	Other investments.	Due by other banks.	Notes of other banks.	Specie funds.	Specie.	Circulation.	Deposits.	Due to other banks.	Other liabilities.
Maine	32		$3,098,000	$5,975,170		$118,060		$711,894	$711,894		$339,231	$2,252,764	$1,094,098	$55,182	$35,153
New Hampshire	23		2,186,500	3,956,881		47,601		421,853	79,109		159,125	1,776,921	481,114		
Vermont	24		1,826,975	3,613,227	$40,996	89,125	$1,105	648,421	151,049		120,798	2,322,962	380,195	21,448	716,415
Massachusetts	119		34,630,011	56,599,309		1,126,161		4,472,950	3,737,150		2,749,917	15,700,935	9,875,316	4,720,815	126,034
Rhode Island	61		11,212,406	14,822,500	155,479	236,610	13,708	484,918	443,445		291,295	4,525,549	4,311,110	588,295	287,949
Connecticut	36	2	8,928,264	14,043,096	275,904	332,745	787	1,470,853	196,368	$58,337	575,656	4,511,570	1,831,291	378,403	2,282,896
New York	185	2	45,541,706	93,063,599	11,755,700	3,850,555	803,157	10,193,737	2,611,608	8,001,639	8,066,313	24,165,980	41,613,744	17,709,410	
New Jersey	24		3,565,288	6,377,034	45,200	292,730	11,379	1,100,162	383,008		620,689	2,548,351	1,894,273	298,560	
Pennsylvania	47	5	17,182,174	34,927,479	1,684,099	1,232,882	2,393,114	3,023,601	2,802,118	2,315,383	3,828,754	11,405,455	15,710,150	3,965,873	129,234
Delaware	4	3	940,000	1,653,595	1,925	85,024		218,341	72,992	17,737	147,612	651,121	290,556	110,535	
Maryland	21	2	8,704,711	13,767,558	966,080	384,760	19,682	1,068,577	790,505	59,789	2,468,235	3,091,408	5,183,609	1,732,813	3,178
Virginia	6	30	9,731,370	18,163,300	372,442	811,270	68,042	1,813,048	433,848		2,709,055	8,944,752	4,238,875	326,992	
North Carolina	4	15	3,407,300	5,169,077	150,000	131,469	11,218	790,026	402,517	7,664	1,410,254	3,415,788	720,778	62,330	
South Carolina	12	2	13,139,571	20,601,137	1,849,463	377,571	348,503	2,850,942	715,093	239,278	1,711,902	8,741,765	3,322,132	2,047,777	642,231
Georgia	11	7	12,595,010	6,953,166	1,690,378	6,487,104	1,404,775	1,753,467	325,515	359,325	1,547,626	4,118,419	1,697,099	406,580	1,774,205
Alabama	1		1,500,000	2,116,591	71,018	152,601	1,229,301	928,290	16,029		1,307,392	2,558,868	1,216,319	20,740	395,124
Louisiana	6	22	14,257,520	18,602,649		2,743,270	2,656,607	3,879,996		492,667	6,979,772	5,069,867	6,210,705	1,763,831	450,529
Tennessee	4	18	7,026,987	9,008,699	624,081	582,863	29,750	688,786	496,656		143,919	3,913,491	1,320,959	43,852	307,937
Kentucky	3	13	7,030,900	11,637,207	546,000	417,312	485,245	1,601,303	700,054		2,683,373	6,682,594	2,909,065	890,210	
Missouri	1	5	1,208,751	3,265,270		114,175	193,973	28,820	36,820		1,902,986	2,594,790	1,377,288	150,153	
Indiana	1	12	2,082,910	3,912,796	237,215	369,860	210,515	749,863	101,970	50,192	1,295,406	3,304,260	663,462	107,242	
Ohio	56		7,129,227	15,594,139		360,959	2,000,163	2,315,810	1,581,329	1,224	3,242,825	10,444,555	4,657,111	1,293,506	1,476,929
Michigan	4	1	392,530	1,080,664	140,777	237,519	68,532	166,187	57,094		107,210	624,431	266,412	16,603	189,195
	685	139	$217,317,211	$364,204,078	$20,606,759	$20,582,166	$11,949,548	$41,631,855	$16,303,289	$11,603,245	$45,379,345	$131,366,526	$109,586,595	$36,717,451	$8,805,300

The Railways of the World.

One of the most surprising circumstances attending the creation of railways is the amount of capital which, within a limited period, has been expended in their construction and equipment. According to the calculations supplied in the work before us, there were in operation at the commencement of 1849, in different parts of the globe, a total length of 18,656 miles of railway, on which a capital of £368,567,000 had been actually expended. Besides this, it is estimated that there were at the same epoch, in progress of construction, a further extent of 7,829 miles, the cost of which, when completed would be £146,750,000. Thus, when these latter lines shall have been brought into operation, the population of Europe and the United States (for it is there only that railways have made any progress) will have completed, within the period of less than a quarter of a century, 26,485 miles of railway—that is to say, a greater length than would com-

* To those accustomed to the woods which have been long inundated, it will not be surprising that water marks remain many years, possibly half a century. The water mark of 1828 is perfectly visible over a large portion of our alluvion, and is, in the woods above Bayou Sara, two and a half inches above the highest mark of 1849. I examined this matter most thoroughly.

† The experiments made by Andrew Brown, Esq. of Natchez, Miss., and read before the American Association for the Promotion of Science, by Dr. Dickeson, give a much larger proportion of sediment; but from the manner of conducting the experiments and obtaining the water tested, I rely upon the results of Dr. Riddell in preference.

pletely surround the globe, at a cost of above £500,000,000 sterling. To accomplish this stupendous work, human industry must have appropriated, out of its annual savings, £20,000,000 sterling for 25 successive years! Of this prodigious investment, the small spot of the globe which we inhabit has had a share, which will form not the least striking fact in our history. Of the total length of railways in actual operation in all parts of the globe, 27 miles in every 100 are in the United Kingdom! But the proportion of the entire amount of railway capital contributed by British industry is even more remarkable. It appears that, of the entire amount of capital expended on the railways of the world, £54 in every 100; and of the capital to be expended on those in progress, £68 in every £100 are appropriated to British railways!—*Ibid.*

Alabama.

Alabama and Tennessee Railroad.—A large convention of the stockholders in this road was held at Shelby Springs on the 13th ult., for the purpose of considering the steps to be taken in relation to the commencement and prosecution of this work.

By the report of the committee in the business of the convention, it appears that the subscriptions to the capital stock of the company are as follows:

Mobile	$200,000
Selma	231,000
Shelby, Bibb and Perry	116,000
Talladega	185,000
Benton	117,000
Cherokee and DeKalb	74,000
	$923,000

To which should be added the appropriation of the legislature, variously estimated at from $260,000 to $300,000. By the act of the legislature this appropriation was divided into three parts, pro rata, according to the distance, viz: from Selma to the Coosa river in Shelby county, from the Coosa river to Gadsden, and from Gadsden to Gunter's Landing. This division would give from $206,965 to $238,806 of the appropriation to be applied to the two divisions from Selma to Gadsden, making the total present means of the company to build the road from Selma to Gadsden, equal to from $1,129,965 to $1,161,806. In this estimate of the means of the company, the value of the grading already done, is not included; this is estimated at $60,000.

By the report of the chief engineer it appears, that the total cost of the road on one of the routes surveyed complete for the reception of its furniture and motive power, is as follows:

From Selma to Montevallo	$681,111
From Selma to Coosa river, in Shelby co.	1,129,782
From Selma to Talladaga	1,519,874
" Gadsden	2,198,696

The following table shows the proportion, in this estimate of the cost of the road, between the grading or work, which may be executed by the common labor of the country and the iron, engineering and mechanical labor:

	Grading or work which may be executed by the common labor of the country.	Iron, engineering & mechanical labor.
Selma to Montevallo	$153,344	$527,770
Selma to Coosa river, in Shelby county	286,448	843,333
Selma to Talladega	377,832	1,142,042
" Gadsden	598,936	1,599,760

It is evident from an inspection of this table that with the present means of the company it is practicable to grade the road to Gadsden, and to build it to Montevallo without incurring liabilities.

The subscriptions which have been made may be divided into two classes—1st, those which will be paid for in cash, and 2d, those which will be aid for in labor.

The first class is estimated to comprise the—

Mobile subscription	$200,000
Selma "	200,000
Shelby, Bibb and Perry	76,000
Talladega "	100,000
Benton "	65,000
Cherokee and DeKalb	40,000
	$681,000
Appropriation	238,806
Total probable cash means	$919,806

The second class, or subscriptions payable in labor, may be estimated for—

Selma	$31,000
Shelby, Bibb and Perry	40,000
Talladega	85,000
Benton	52,000
Cherokee	34,000
Total probable subscription payable in labor	$242,000

According to this division it would require—

1st. But an addition of $280,463 to the labor subscription to grade the road to Gadsden and to build it to the Coosa river.

2d. An addition of $222,236 to the cash subscription, and of $356,936 to the labor subscription, would be required to grade the road to Gadsden and to construct it to Talladega.

3d. An addition of $356,936 to the labor subscription, and of $679,954 to the cash subscription, would be needed to build the road from Selma to Gadsden.

In view of the favorable character of the country for the construction of a cheap and effective railroad, and of the certainty, that when completed, your enterprise will yield a handsome dividend on its cost, the committee believe that as soon as the road is commenced, and proof is given that it will be vigorously prosecuted, renewed and increased confidence will be established, and the subscriptions will be largely augmented.

In addition to the means above provided, a bill has already passed the Senate of the United States, of a similar character to those in favor of other roads, aiding this work by a grant of the public lands. Should this bill become a law, it will largely add to the means of this company.

The committee advise that the road should be placed under contract at once, and express a belief that it can be completed in three years.

In relation to furnishing this road with Alabama rails, the committee say:

The question of the propriety of furnishing the road with Alabama iron has been referred to the committee. The committee consider it a matter of very great importance to the company that this subject should be thoroughly investigated, and if practicable, that arrangements should be made to procure Alabama iron rails. The supplies of excellent iron ore and coal, on and near the route of the road, are great; unrivalled facilities for the cheap manufacture of iron also exist, and the committee do not conceive why with these great advantages the whole road, or a large portion of the road, should not be laid with Alabama rails. The committee will not enter into a discussion of the merits of this question, but would suggest that the directors could not adopt a policy which would be more conducive to the interests of the company and of the country traversed by the road, than to make, if practicable and consistent with the interests of the company, such arrangements as will cause the iron to be manufactured among ourselves.

Whether the rails shall be made of Alabama iron or not, this project we see has already turned the attention of the people of that State toward their great mineral resources, and will have the effect to bring into use what, to a great extent, would have remained dormant, but for such a work.

The road is to be one of the first class, as far as construction is concerned. Of the ability of the people interested in it to build it in three years, we have not a doubt. They can now commence work with a very respectable amount of means secured, a much larger proportion of the cost than most works of a similar character in the west can show. Certainly no difficulty will be met in obtaining the additional amount wanted as the work progresses.

Indiana.

Lafayette Railroad.—The Indiana State Sentinal of August 28th, says—"A letting of the grubbing, grading, etc., of this road from Lebanon to Indianapolies will take place on Wednesday next. The road from Lebanon to Lafayette is nearly ready for the iron. The depot having been located at Indianapolis, and the route fully established, and many of the citizens of Indianapolis having taken hold of the work with spirit and energy, there is now every prospect of a speedy completion of this work. It is only 62 miles to the Wabash river, at Lafayette, by this route, and it is said to be the cheapest railroad route in the State."

European and North American Railroad.

We copy the following table of distances of this line, from a speech of M. H. Perley, Esq., of St. John, N. B., recently made by him in that city.

	Miles.
From Halifax to the boundary of Nova Scotia, near Baie Verte (surveyed)	124
From thence to the Harbor of Shediac (surveyed)	26
From Shediac to St. John (Wilkinson's survey)	108
From Halifax to St. John	258
St. John to Calias, under survey, estimated	76
From Halifax to the frontier of the U. States. (Of this distance 124 miles is in Nova Scotia, and 210 in New Brunswick).	334
From Calias to Bangor, in a direct line, is 90 miles, but the railway route is estimated at.	112
Whole length of the European and North American railway	446

Illinois.

Galena and Chicago Railroad.

We copy the following from the Chicago Tribune relative to the progress of this work:

We have delayed answering our enterprizing cotemporary for some days, in order that we might be able to give definite information. It now gives us pleasure to state, that the directors who went east a few weeks ago to try to negotiate a loan for the continuation of the road, have succeeded, without difficulty, in obtaining $400,000 at a very low rate of interest. We understand farther, though not officially, that so fair does the credit of the company stand in the eastern money market, that it has offers of enough to complete the entire line; but of course no more has been taken than can be used advantageously at this time. With the loan obtained, and the subscriptions to stock already made, the directors will be able to complete the road to Rockford, next year, and may, also, probably, be able to prepare the track of the branch between Rockford and Beloit. The section of the road between Rockford and Galena will be put under contract immediately after the completion of the section between Elgin and Rockford, and it is not improbable that it may be sooner. The directors of the company are prudent business men, and will not make any engagements that will jeopard the interests of stockholders, or give to eastern capitalists the control of the road. A report has been published that an eastern company propose, on certain conditions, to complete the entire line from Elgin to Galena. If any company of private individuals can carry through a work in so short a time, we doubt not the directors of the road can do it equally as soon. One thing may be depended on, that the road will be completed in 1853, at which time it is supposed the line between this city and Toledo, and thence around Lake Erie, on the

southern shore. will also be constructed, so as to give one continuous railroad chain between Galena and the eastern cities.

Maine.

The Pembroke Iron Works are in successful operation; and besides making Pembroke look exceedingly lively, add an attraction to the passer by. We observed them in operation, the other day, in company with quite a number of ladies and gentlemen from a pleasure party. The way they 'use up the old iron' is a perfect caution—it was to the ladies—to stand back! And the way they turn out the cut nails in the nail factory, is rather fast than otherwise. Mr. Wadsworth, the superintendent, informed us that the establishment employed 150 workmen—and, including teamsters, &c., nearly 200. The works turn out at the rate of about 5,000 tons of iron per annum; it costs for the furnace about $10, and when worked out is worth in Boston about $60 per ton, making the aggregate yearly amount of iron worth $300,000. The wages paid range from $1 25 to $3 per day. The freighting for the works employs a number of vessels constantly. Indeed, with the iron works, ship building, trade, farming, &c., Pembroke is decidedly looking up.—*Eastport Sentinel.*

Iron Mountain in Wisconsin.

A few days since, says the Mineral Point Tribune, of July 12th, we were shown a specimen of ore brought from Black river, Crawford county, the quality of which surpasses any iron ore we have ever before seen. So pure is it, that it was thought by good judges that smelting furnaces will be unnecessary for obtaining the pure metal, it yielded about ninety per cent. The amount of ore is said to be very great, it covering at least forty acres.—Other veins have been discovered near by, and, if our informants are not very much deceived, this discovery is very sure to add much to the already extensive mineral wealth of Wisconsin. Specimens have been sent to experienced iron masters at the east, who pronounce it of a superior quality. An abundance of water power is near at hand for carrying on furnaces; and as it is near navigable water, it must very soon become a source of profit to the enterprizing gentlemen who have surveyed and located the land for the purpose of erecting iron manufactories at no very distant day.

Panama Railroad.

In addition to our notice of this road last week, we learn that a great portion of the rails have been contracted for in England for several months; and that 1,500 tons of them are already delivered on the Isthmus. The pattern is a heavy ∩ rail, of 60 lbs. to the yard. The wrought iron spikes and chairs will be made in this country.

Ohio.

Railroad to Belleville.—It will be seen by reference to our advertising columns that the construction of the Mansfield and Sandusky railroad has been completed to Belleville, 14 miles south of Mansfield, to which place the cars are hereafter to run regularly. By the 1st of October the entire road to Newark, 60 miles from Mansfield, it is expected will be put in operation—in time to bring in a portion of the immense quantity of wheat thro' that region, for lake shipment this fall.

The road from Mansfield to Newark is to be all laid with the T rail, and in every respect is unsurpassed by any road in the country.—*Sandusky Mirror.*

Pennsylvania.

Hempfield Railroad.—This road is to branch from the Pennsylvania Central railroad, at Greensburgh, and run direct to Wheeling, there to connect with the Ohio Central. The main object of this road is, we presume, to make a short cut to Central Ohio, instead of taking the more circuitous route by way of Pittsburgh. On this ground it is opposed by that city. The exploration of the route was made by J. Knight, Esq., who estimates the cost of the road at $25,000 per mile.

The distance from Greensburgh to Wheeling is 80 miles, and the Engineer states the whole distance from Philadelphia to Wheeling, on this route, to be as follows:

From Wheeling to Greensburgh.....	80
Greensburgh to Harrisburgh...	220
Harrisburgh to Philadelphia...	107
Total.....	407

New Hampshire.

New Hampshire Central Railroad.—The laying of the rails above Old Mill Village will commence next week. It is supposed that the track will be completed to Weare Factory by the first of November, and perhaps at an earlier day. The distance is about 18 miles from Manchester.—*Manchester American.*

Indiana.

Junction Railroad.—The Junction railroad, from Hamilton to Rushville, has been put in motion with good prospects of success—a board of directors has been elected of which the Hon. Caleb B. Smith is the President; and the Connersville Chronicle says; "the success of the proposed road seems now to have assumed a character of certainty."

Missouri.

Pacific Railway.

At a recent election in St. Louis county, the proposition to subscribe $100,000 on behalf of the county, to the Pacific railroad, was submitted to the vote of the people, and *carried* by yeas 4,248, against nays 467.

Pennsylvania.

The Pennsylvania railroad, says the Philadelphia Ledger, will be opened about the 1st of September to Hollidaysburg. At Hollidaysburgh the road connects with the Portage railroad to Johnstown. Passengers for the west will have a continuous railroad from Philadelphia to Johnstown, a distance of two hundred and eighty miles. At Johnstown they take the stages going through the entire distance from Philadelphia to Pittsburgh in thirty-two hours, or by railroad and canal, without the fatigue of night travel by land, in 40 hours.—This is the most expeditious and pleasant route which can be taken, and the announcement will induce many passengers to choose it in preference to any other.

Tennessee.

Nashville and Chattanooga Railroad.—Col. V. K. Stevenson, the intelligent and go-ahead President of the above road, has been in this place for the last ten or fifteen days, waiting to see the operations on this end of the road fairly under way.—We have heretofore mentioned that the Irish laborers had arrived, and they are now only waiting for the tools, which had been heard from early in the week and were expected daily. The work from this place to the Tennessee river is very heavy, and Col. Stevenson very properly deems it essential that he should watch over it with vigilance. From the character of the contractors, we have reason to believe that the work will be pressed forward to an early completion.—*Chattanooga Gazette.*

Massachusetts.

Georgetown & Lawrence Railroad.—The friends of this enterprise met in West Boxford on Tuesday last, the charter of the road was accepted, and the following gentlemen chosen directors: George J. Tenney, President, and Samuel Little of Georgetown, Enoch Wood of Boxford, James Stevens of Andover, and Oliver M. Whipple of Lowell; the meeting stands adjourned to Tuesday of next week at the same place. James Stevens is clerk of the corporation. The route of this road is 6¼ miles in extent from Georgetown to the Essex railroad at North Andover. The whole cost of the land damages, grading, superstructure, fencing, and buildings of the road, is estimated at only $92,000, being less than $15,000 per mile. Efforts are now making to fill up the stock subscription. There is also another chartered route of railroad extending above Georgetown, designed to run through Groveland and connect with the Boston and Maine railroad at Bradford; this has also been recently re-surveyed, and is understood to be the favorite route in Newburyport, while the other has the preference at Georgetown.—*Salem Register.*

Ohio.

At a meeting of the stockholders of the Central Ohio railroad, convened in Zanesville on the 27th ult., the following directors were chosen for the ensuing year:

John H. Sullivan, James Raguet, George James, Wm. Galigher, S. R. Hosmer, J. L. Cox, E. Ball, Daniel Brush, Levi Claypool, of Muskingum; J. Brumbach, A. Sherwood, of Licking; W. Dennison, G. Parson, of Franklin.

At a meeting of the directors, the following officers were re-elected:

J. H. Sullivan, President.
D. Brush, Treasurer.
D. H. Lyman, Secretary.

Ship Canal at Ste. Marie.

The Lake Superior Journal is agitating the project of a ship canal around the Ste. Marie Falls.—We extract the following:

The estimated cost of a ship canal, with 12 feet of water, around the Falls, is $200,000. The whole length of contemplated canal is 4,460 feet, a trifle over three fourths of a mile, in which distance a fall of 18 feet is to be overcome by two locks of 9 feet lift each, and in length not less than 250 feet, and 60 feet wide, to be constructed of cut stone, and to have a sufficient depth of water to pass vessels drawing 10 feet of water at all times. The canal will be 80 feet at bottom, and 100 feet at the water line, and will be constructed on the old survey by the engineers of the general government, which is on a straight line across the bend of the river at this point; and when completed it will afford some of the finest water power in the world, which must of itself afford considerable revenue to the company.

Dust on Railroads.

One of the great drawbacks to comfort in railroad travelling, is the dust thrown up by the wheels. It is said that a Mr. Bromley, of New Haven, has invented a remedy for this, which is represented to have met the approval of intelligent railroad gentlemen. It is to encase the wheels so as to prevent the dust from rising at the sides, and then by India rubber aprons and springs to keep it from rising between the cars. These contrivances may be so arranged as not to encumber the wheels; while the aprons spread between the cars have another useful purpose, as they prevent people from falling on to the track, if by any mishap they should slip or fall off the platform. If Mr. Bromley has succeeded in removing this great inconvenience of railroad travelling, he deserves the thanks of the travelling public, as well as a rich pecuniary reward.

Canada.

We see it stated in our exchanges, that the Toronto and Simcoe railroad is now in a fair way to be built. The city council have resolved to loan the credit of the city to the company for $400,000. They ask security of the stockholders on real estate or bank stock before issuing debentures. The county of Simcoe pledge $200,000 debentures for the same object.

GRAHAM'S COMPOSITION, to Remove and Prevent Incrustation (or Scale) in STEAM BOILERS.

THIS valuable composition having been fully and extensively tested, is now offered to the public, as a sure remedy and preventive for incrustations in steam boilers of all descriptions. By its use, all scale is entirely removed from the boilers of Ocean and River Steamers, Locomotive and Stationary Engines, in from 3 to 20 running days, according to the size of the boiler and thickness of the scale. In New Boilers, all incrustation is prevented at a trifling expense.

The preservation of the boiler, great economy of fuel and labor, safety, and increased speed, are among the advantages to be derived from the use of this composition.

Orders should state the quality of water used, viz: "Salt," "Fresh," or "Brackish."

For sale, with directions for use, by

W. H. NEWMAN,
75 Pearl street,
New York.

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TESTIMONIALS.

New York, August 17, 1850.

We have used Graham's Composition in the boilers of the Steamship Southerner, during several voyages between this place and Charleston. The boilers were old and very foul with scale, a very large quantity of which was removed by the use of the composition, and no new scale was formed.

From our own experience and observation in the use of the article, we are fully satisfied that it will effectually remove the incrustation made by sea water, and also that it will effectually prevent its formation

We are also satisfied that the use of it will be attended with a great saving of fuel, and that it has no injurious effect upon iron.

DAVID N. MAXON, Engineer,
BERRY, Master,
Steamship Southerner.

—

Steamship Philadelphia,
New York, August 27, 1850.

I have used "Graham's Composition for Steam Boilers," in the boilers of Steamship Philadelphia, on the voyage to and from Chagres, and am entirely satisfied that it will remove, dissolve and *prevent* all scale or incrustation in salt water boilers.

For the preservation of the boiler and economy of fuel and labor, I hereby recommend the employment of this composition in the Boilers of Ocean Steamers.

WM. BISBY,
Chief Engineer.

—

Novelty Iron Works,
New York, July 5, 1850.

We have examined the specimen of Graham's Composition for preventing incrustation of steam boilers, and we believe it may be used with perfect safety in reasonable quantities for the purpose intended, as there does not appear to be any agent in the composition calculated to injure the iron.

STILLMAN, ALLEN & CO.

—

Piermont, May 20, 1850.

I have used "Graham's Composition," and find it to produce the intended effect; and I hereby, without hesitation, recommend it for Stationary, Marine and Locomotive Engine Boilers.

JOHN BRANDT,
Superintendent Motive Power
New York & Erie R.R.

—

New York, July 25, 1850.

In answer to many inquiries as to the practical effect of "Graham's Composition," I will state that I have used it in the boiler of the Steamboat Sunwick, which had become considerably incrusted with hard scale from both salt and fresh water. We used 10 lbs. per day, for three days, without blowing off the water, until the fifth day, when all was drawn off. To our astonishment, we found the whole interior of the boiler as clear of scale and smooth as when it came from the hands of the maker. The following week, we tried the same quantity in a small steam tow boat.—The boiler had old scale of long accumulation and very thick. We ran the boat three days without blowing off, and on the fourth day washed out the boiler and found it, like the "Sunwick's," perfectly clean and smooth as when new. I am therefore enabled to state that the use of the composition in these two instances under my own immediate observation and directfon, has been attended with complete success.

JAMES MORROW,
Engineer Astoria Ferry.

AMERICAN RAILROAD JOURNAL.

Saturday, September 7, 1850.

Montgomery, Ala., August 23, 1850.

To the Editor of the R. R. Journal:

Sir—Had you published your comments on my letter, which is inserted on the 487th page of your Journal, in the same number which contained that letter, I would been content to have submitted the issues between us to your readers without further remarks; but as you delayed your comments for one week, and for a different number of your Journal—which may be read by persons who may never see my letter referred to—I must respectfully ask to be permitted to reply through the medium of your Journal, to the comments.

In your first notice of the "Remington Bridge." you manifested, I thought, a disposition to criticise and condemn its principle of construction, without entirely comprehending the subject. Of this I did not complain. As an inventor, I have become used to the prevalent habit of a large class of men to condemn everything that is outside the reach of their comprehension. I, therefore, contented myself with inditing for your Journal a reply, which I designed to be in good temper, and to manifest entire fairness.

In your rejoinder, I have to complain that the same rule does not seem to be observed. You volunteer advice, when the business in hand called on you for facts—or at least reasons, good and sufficient, for your opinions adverse to my bridge. You were so very free in your strictures, that, leaving the main points at issue entirely, you assume to speak the judgment of the people as to my "position" and my poor merits as an inventor.

Now, sir, permit me to remark that I am very much disposed to question your right to speak for any body save yourself, as I am, also, to question your competency to instruct, or your right to advise me concerning the matter at issue or any other of like character. I certainly should not have troubled you with any communication, but for your illiberal criticism; and permit me to add, that if you understand your own "position," as I hope I do mine toward the public, you will not again venture to indulge in flippant strictures, or blundering misstatements, where argument and facts are demanded.

In your criticism just published, you say my bridge is "simply a truss bridge:" that there is no new idea or principle in it, and that iron bridges are stronger, more durable, and cheaper in the end.

To all these points I replied in detail. I demonstrated that my bridge was *not* a truss bridge: and what was your reply? "The gentleman exhibiting the model *told you so!* Suppose that some gentleman were to assert that your Journal was *partizan* in its character—would that make it so? It would not, of course. Well, then, you see plainly the inconclusiveness of the reason which induced you to assert an error of fact. I have no interest whatever in the exhibition of my bridge in New York. I never saw it, and do not know, further than what I see in the newspapers, that it represents my principle of construction. It occurs to me that before you ventured to pronounce my bridge "simply a truss bridge," presenting "no new idea," that, as the conductor of a scientific journal, it was your duty to examine it. In not doing so, but in pronouncing judgment *on another man's opinion*, you leave yourself open to the suspicion of harboring a "foregone conclusion" adverse to it.

Your next objection is equally indefensable as that just noticed. You quote one as saying that my bridge is entirely free from "oscillatory motion," and, thereupon remark—

"We certainly cannot tell what he means by this statement, as exactly the opposite is the fact, *as any one can readily see.*"

The dogged positiveness of this assertion, that "any one can readily see" oscillatory motion in the Remington bridge, notwithstanding I have said there is none, deserves to be characterised by language I shall not use. Why, sir, you have never seen a Remington bridge, erected for practical purposes! You are enlisted against a structure, of which your own hastily expressed opinions show *you have no correct idea, or information.* To oscillate is to move as the pendalum of a clock. Now, sir, I assert most positively and unequivocally that there is no such motion in a Remington bridge. A bridge 406 feet *span*, 12 feet wide, is now completed at this city, and a wagon with five mules in passing over it has demonstrated what I assert.—But you say it was this motion which broke the model bridge in New York. This is your opinion only; I maintain (if the bridge was properly constructed) that you are in error. I have had longitudinal supporters in model bridges subjected to every test of strength, and they never broke, *unless a dead weight, more than equal to their strength, was put upon them.* If one of the stringers in the New York model broke, I am sure that it either broke from an excess of weight, or from some defect in the timber.

It reply to my remarks controverting your assumption that the Remington bridge is a suspension bridge, and that iron, in everything, is better than wood, you say—

"Mr. Remington claims that his own bridge is as much stronger than iron as 14 is to 9! His model with three stringers sustained a weight of 14 tons *He says that a bar of the best charcoal iron, one inch square, will sustain only* 3 *tons, and refers to Talford for authority. We have examined Talford's tables, and find that he gives* 29½ *tons as the strength of a bar of iron one inch square.*" * * * "We are certainly astonished to see a man coming forward at this late day, and claiming that wood is stronger than iron."

I have never, sir, in all my life met with a more manifest illustration of the habit some writers have of setting up a man of straw, and knocking him down again, than is presented in the above quotation. In the sentence I have quoted in italics, you *misquote me and misrepresent me entirely.* Your "astonishment," therefore, is something akin to the noise made to represent thunder in our theatres: *it was manufactured for the occasion.* What I did say was this—

"A model bridge with three stringers one inch square, at a curvature of one-fiftieth of their chord line sustained a weight of *fourteen and one half tons.*"

The proof of this I sent you, which although very brief you have not published.

I said further that: "The best charcoal iron, *with a curvature of one fiftieth of its chord line*, will only sustain three tons to the square inch, and consequently if the stringers had been iron, in the bridge referred to, the breaking point would have been at *nine tons.*"

For authority as to the facts concerning iron I referred you to Talford, as you remark

Now, sir, I shall show wherein you have "*misquoted and misrepresented me.*"

You say: "We have examined Talford, and find that he gives 29¼ as the strength of a bar of iron one inch square."

You found more, and different testimony; but it did not suit your purpose to tell it all.

Talford says: "A ton of good English malleable iron one inch square will SUSPEND from 27 to 30 tons *before it breaks*, and will bear from 15 to 16 tons *before its length is at all extended.* With a curvature of one twentieth of the length malleable iron besides its own weight sustained *one third* of what broke it perpendicularly. An inch bar would therefore bear *one third of fifteen tons* (at a curvature of one-twentieth its length.—R.) without deranging its parts; but it is better in practice to assume *that an inch square in section should only bear four tons.*"—[Page 507 Cressys En. of Civil Eng.]

Taking Talford's authority, quoted on the page already cited, for the strength of iron wire at *one-fiftieth* of its chord line (the curvature of my bridge at the trial of its strength in this city) I assume that a square inch of iron in section will only sustain *three* tons—but assuming it to be *four*, which Talford gives it at one twentieth of its chord line, I still have this result: Iron in section would have sustained 12 tons; my bridge sustained 14½ tons.

Perhaps, sir, you have not examined authorities of this kind as closely as an editor of a scientific journal should, and hence your astonishment and wonder. But you will yet learn that—

"There are more things in Heaven and Earth
Than are dreamed of in your philosophy."

In this article I have simply designed to set you right where you had committed manifest errors.—*I shall trouble you, sir, no more.*

Very respectfully,
JOHN R. REMINGTON.

—

Our notices of the "Remington Bridge" were based upon the model exhibited in this city. Mr. Remington did not in his first communication disclaim this model. We supposed (without having made any inquiry as to the fact), that it was constructed under his direction, and exhibited with his approbation. If we have been misdirected in this matter, if we have not seen the Remington bridge, and if the person who exhibits what is claimed to be one, had no authority to speak in the premises, why then we have been barking up the wrong tree. We made no assertions of the model that were not strictly and palpably true. If, therefore, the model is not a *copy* then we have not been discussing the Remington bridge, but a counterfeit. We would not advise, but if we were in Mr. Remington's place would not suffer ourselves to be misrepresented, and consequently injured, by persons going about the country with models, and claiming to speak for ourselves without authority. The *model* moved in any direction, almost as readily as would a rope under weight or pressure. We will not stop to define the nature of this motion, whether it was vibratory, oscillatory, or any other motion. It was universal as far as the *slack* would allow it, and we believe that the greater includes the less.

But to the main point. We have not seen the elephant, and of course have been describing another animal. The great point to be settled, and the one about which the public feel any interest is Mr. Remington's claims as inventor. Waiving everything else, let us look at this. We give Mr. Remington's claims in his own words:

"To illustrate more clearly this point I will add that, *the tensile strength of timber when in nearly a horizontal position is made to sustain nearly the entire weight necessary to separate the fibres.* This I claim is a new idea in mechanics. I applied it in the use of timber in constructing bridges for the first time. The same fact does not apply in any *suspension* bridge, whether constructed of hemp or iron."

Now we join issue here with Mr. Remington.—We contend that all bridges to a greater or less extent depend upon the tensile strength of wood. All truss bridgess depend very largely upon the tensile strength of the bottom chord. Every scientific bridge builder calculates the strength of this chord as one of the elements of the strength of the structure. What Mr. Remington claims as a discovery is a principle familiar to all bridge builders and has been in application ever since wooden bridges have been in use. Having stated Mr. Remington's claims in his own language, and our objections, we are content to leave the decision in the hands of persons whose experience constitute them the proper judges.

The next point is will iron in a horizontal position, or with a slight curvature, sustain a greater weight than the same area of wood. Confinement to the house from indisposition has prevented us from examining into this branch of the subject, which will receive attention in our next. We have no doubt upon such examination that it will be found that the same relative strength will be found to continue in whatever position placed. The only evidence we have that this rule will not hold good is the experiment of Mr. Remington, which, isolated from all others, cannot be received as establishing a general principle, even if made by Talford himself. No sensible person would think of basing a principle upon the evidence of one experiment. Upon the authority of Talford, given by Mr. R., the breaking weight of an inch bar with a curvature of 1-20th of its chord line would be 10 tons, more than double the weight required to break the Remington bridge. It would be unsafe to be sure to subject it to this load, but no more so than to subject the wooden bridge to a similar test. Therefore Mr. Remington's assertion, that if the stringers in his experiment had been iron instead of wood the breaking weight would have been at 9 instead of 14 tons entirely incorrect even upon his own evidence. If iron had been used it would have been at 30 instead of 14 tons. But as we propose to look further into this matter in our next, we will reserve further remarks till then.

Graham's Composition to Remove Scale in Steam Boilers.

We invite attention to the Advertisement of W. H. Newman, in another part of our paper, of the sale of the above article.

The injury to boilers from the scale, as it is termed, is not only a source of great expense, in the more rapid wear of boilers, and in the constant repairs necessary to keep them in order; but in the additional amount of fuel required to keep up steam in an encrusted boiler. Every person acquainted with their use is familiar with these facts, and will readily appreciate the value of any remedy that can remove the evil.

Mr. Newman claims that he now offers such a remedy in the above composition; and the testimonials he offers of its value are of the most satisfactory kind—from persons of well known experience and character—who are not only the persons best qualified to give an opinion in these matters, but who would not express one that was not the result of their own convictions.

We have no doubt but from other testimony we have seen in its favor, that it is all it is represented to be, and we have no hesitation in recommending its use.

NOTICE

For Proposals for Railroad Iron, for the Alabama and Tennessee River Railroad,

TO BE MANUFACTURED FROM ALABAMA ORE.

THE Alabama and Tennessee River Railroad Co. invite proposals, until the 1st of January, 1851, for Iron Rails, to be made of Alabama Iron, for the Northern Division and part of the Southern Division of their road, embracing a distance of about 105 miles. The rails are to be of the T pattern, in lengths of 18 feet, and weighing 63 lbs. per lineal yard. They are to be delivered on the Coosa river, at a landing to be hereafter designated, between Kimulgee ferry and Fort Williams, commencing their delivery on the 1st of November, 1851, and continuing it at the rate of from 80 to 100 tons per week, until the whole quantity required (10,500 tons) shall have been delivered. They are to be inspected by Lewis Troost, Chief Engineer.

It is proper to state to iron masters and capitalists at a distance, that the country traversed by the Northern and part of the Southern divisions of the road abounds in excellent iron ore and bituminous coal, and possesses every advantage for the successful manufacture of iron, health, cheap labor and provisions.

Further information may be obtained by addressing the President of the Company at Selma, Ala.

By order of the Board of Directors.

J. W. LAPSLEY, President.

Floods of the Mississippi.

We copy into our present number a part of a very interesting article upon the characteristics of this great river, which cannot fail to receive attention. As the great river of North America, everything in relation to the Msssissippi possesses an attractive interest; and all facts which can teach us to avoid the vast and destructive overflows which have been so common of late, are of the highest value.

To Contractors.

ALABAMA AND TENNESSEE RIVER R. R.

SEALED Proposals will be received by the Directors of the Alabama and Tennessee River Railroad, at their office in Selma, until the 1st of November next, for the graduation, masonry and bridging of 56 miles of the Southern Division of said road, extending northwardly from Selma.

Plans and profiles may be inspected and specifications and information will be given at the office of the company in Selma, on and after the 15th of October next.

Twenty-six miles of this division were graded in 1839. This part of the division will require repairs to the road bed, and will be furnished anew with culverts and bridges.

The country embraced in this division is healthy, well watered, and possesses facilities for obtaining supplies of provisions.

Proposals may be based upon cash payments, or upon payments of a proportion, or of the whole of the work in stock.

The Directors reserve to themselves the right to accept or reject proposals as they may think proper for the interests of the company.

The Directors expect to have as much as twenty miles of the Northern Division, extending northwardly from the Coosa river in Shelby county, ready for examination by the 15th November, and for letting by the 1st December; and 30 miles more, ready for examination by the 1st and for letting by the 15th of January, 1851. It is likewise their intention to let out the grading, masonry and bridging of the remainder of the Southern Division and of the Northern Division terminating at Gadsden, with all possible despatch.

By order of the President and Directors.

LEWIS TROOST, Chief Engineer.

Selma, Ala., August 30, 1850.

Pure Iron Produced Directly from the Ore.

We perceive by the report of the Newark Daily Advertiser that Mr. Alexander Dickerson, of that place, has invented certain improvements in the formation of the puddling furnace, by which he is enabled to manufacture iron of superior quality, directly from the ore, by the use of anthracite or bituminous coal or wood.

Charles T. Jackson, M. D.,

STATE ASSAYER, late Geologist to Maine, Rhode Island, New Hampshire, and the United States, offers his services to his friends and the public in making any Chemical, Mineralogical or Geological researches that may be required for the improvement of Agriculture and the Manufacturing Arts. Particular attention will be paid to the exploration of mines and to assaying of ores of the metals.

State Assayer's office, 31 Somerset st.
Boston Sept. 3, 1850.

To Railroad Companies and Mechanical Establishments.

A Person of considerable experience and practical knowledge in Mechanical, Civil and Marine Engineering, is anxious to meet with an engagement with either a Private Individual or Public Company, who may have works either to design or execute in the above branches of the Engineering Profession.

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Notice to Contractors.

COVINGTON & LEXINGTON RAILROAD. Sealed Proposals will be received at the office of the Covington and Lexington Railroad Company, in the city of Covington, until the 10th day of September next, for grading twenty miles of the Covington and Lexington Railroad, commencing at Covington and extending up the valley of the Licking river. The proposals will include all the excavations, embankments, and masonry for culverts—also the masonry for bridges.

Plans and specifications of the work to be done, and the terms of payment, may be seen at the office of the company, at any time between the first and tenth of September.

SYLVESTER WELCH,
Engineer Covington and Lexington R. R.
Covington and Lexington Railroad Office,
July 21st, 1850.

Notice to Contractors.

SEALED PROPOSALS will be received at the office of the James River and Kanawha Company in Richmond, until the 1st day of October next, for the construction of the Piers and Abutments of the Bridges across James River at New Canton, Hardwicksville and Bent Creek. This work will be paid for in cash. Besides the usual reservation of 20 per cent. on the monthly estimates, the contractor or contractors will be required to give ample security, satisfactory to the Board of Directors, for the completion of the work at the time and in the manner specified in the contracts.

Plans of the above works will be exhibited and specifications thereof delivered to the contractors at the office of John Couty, the Assistant Engineer in charge of the same in Columbia.

WALTER GWYNN,
Chief Eng. J. R. & K. Co.

August 16, 1850.

CUT NAILS OF BEST QUALITY, BAR IRON (including Flat Rails) manufactured and for sale by FISHER, MORGAN & CO.,
75 N. Water St., Philadelphia.

Great American Engineering

AND MECHANICAL WORK, just published in medium folio One Dollar, 75 cts. to Subscribers.

Part VII of "Specimens of the Stone, Iron & Wood Bridges, Viaducts, Tunnels, Culverts, &c., &c., of the United States Railroads." By George Duggan, Architect and Civil Engineer.

The present part contains beautifully executed plans, elevations, sections and details of the elegant timber Bridge, (Burr's Patent,) 150 feet span, across Salmon River, Malone, on the line of the Northern—Ogdensburg-railroad, and isometrical views of Bridges 30, 40 60, 82 and 88 feet span on the line of the Utica and Syracuse railroad, with specifications, form of contract, &c. &c., for the Connecticut River railroad.

"It is a work that was a great desideratum, and must prove of great benefit to the engineering profession generally, and especially to the tyro in practical engineering and mechanical knowledge; in truth it strikes us, that it would require years of labor and patient toil on the part of a young engineer to prepare the drawings, and collect the information that will be embodied in this work, and can now be secured for the trifling sum of $9"—[Scientific Amer. March 16, 1850.

In connection with this subject (Iron Railroad Structures) we take occasion to call attention again to Mr. Duggan's valuable and expensive publication, exhibiting drawings, with full descriptions of the various stone, iron and wooden bridges, viaducts, tunnels, culverts, etc., of all the Railroads in the United States. Mr. Duggan is an accomplished Architect and Civil Engineer, who came from Ireland to this country to exercise his profession; but finding Railroad construction here, in many respects, different from that he had been accustomed to in Europe, he applied himself to the study of our system; and the fruits of his researches and investigations embodied in this work, are well calculated to meet the exigencies of engineers, and to assist draughtsmen, bridge builders, mechanics and students.—[N. Y. Journal of Commerce, Feb. 14, 1850.

Published by GEORGE DUGGAN,
300 Broadway, New York.

To whom all communications should be addressed, and subscriptions forwarded.

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Having secured the valuable services of Mr. David Matthew as Superintendent (who has been for five years foreman in the Iron Works of John Watchman, now the Vulcan Works, Baltimore, and for 12 years superintendent of the Mohawk and Hudson and the Utica and Schenectady Railroads, New York,) they feel confident that all orders entrusted to them will be faithfully executed.

Having an extensive Wharf in front of their works, it will afford a safe harbor for all classes of steam vessels that may require repairs during the winter.

C. M. & J. C. SITER.

Gloucester, July 24, 1850. 1m.

Rosendale Cement.

THE NEWARK AND ROSENDALE LIME AND CEMENT CO. are now manufacturing at their works in NEWARK, N. J., and Ulster county, N.Y., a very superior article of *Hydraulic Cement*—also Lime Calcine Plaster, etc. Contractors and dealers will find it to their advantage to call or make application before purchasing elsewhere. All communications addressed to the subscriber, at Newark, N.J., will be punctually attended to.

1y*15 HENRY WILDE, Secretary.

MINING AGENCY.
Capt. O. H. Matthews,

Civil and Mining Engineer, F. G. S., London, etc.

HAVING completed his three years engagement on Lake Superior, is open to negotiate for another appointment as Mining Agent, or Superintendent of Mines. Also, to give his opinion and advice upon Mineral Lands, to Buyers and Sellers of Stock, or to be consulted on any section in this important branch of national industry.

The most implicit confidence may be relied on, and immediate attention given to all communications (pre paid). Address Capt. O. H. Matthews, Toronto,

July 27th, 1850. 3m

Great Work on Bridge Building, etc., etc.

JUST published in medium folio, One Dollar, 75 cts. to subscribers.

Part I. of a "THEORETICAL AND PRACTICAL TREATISE ON THE CONSTRUCTION OF BRIDGES IN STONE, IRON AND WOOD," By George Duggan, Architect and Civil Engineer.

The present part contains beautifully executed plans, elevations, sections, and centering, of the Bridge of St. Maixence, France, by M. Perronet, the eminent Architect and Engineer, and plans, elevations, sections, and details of the oblique Timber Bridge, 700 ft. long, constructed for a double track across the River Tyne, on the line of the Newcastle and Carlisle railroad, by John Blackmore, C. E., with an introductory article on the relative merits of the various materials employed in the construction of Bridges, as regards economy, strength and durability, and critical remarks on the various forms of bridges designed and constructed by the most eminent architects and engineers in Europe and America.

"PART VI. of Specimens of the Stone, Iron and Wood Bridges, etc., etc., of the United States Railroads," By George Duggan, Architect and Civil Engineer, contains specimens of the plates and letter press intended for the APPENDIX, being the commencement of a complete Treatise on the Theory and Practice of Bridge Building. This will be one of the most valuable works on the subject ever presented to the attention of engineers in this country—condensing the most important information on this branch of architecture contained in the writings of the most eminent scientific men in the French, German, Italian, and English languages, in the course of the last and present century. It will be illustrated by numerous accurate representations of bridges of the greatest celebrity in modern times. Elaborate articles will be given on the strength, property, and uses of the different materials employed, and on the most approved methods of constructing Coffer Dams, Foundations, Centering, etc., with descriptions and drawings of the various engines and Machines that were found most useful in constructing the works, and a selection of such specifications as may be of service to the practical bridge builder. The sixth number treats of the Application of Iron to Railroad Structures, and is illustrated by beautiful drawings of the Bridge across the Delaware at Saw Mill Rift on the Erie Railroad, and of the bridge over Fairfield street, on the Manchester and Birmingham Railroad. The great success of this work thus far is the best tribute to its scientific merit and its adaptation to the wants of the American engineer."—[New York Daily Tribune, June 28, 1850.

Published by George Duggan, 300 Broadway, New York, to whom all communcations should be addressed and subscriptions forwarded.

☞ Parties remitting Mr. Duggan $5. and the remainder $4 when they have been supplied with the first six parts of the "Theoretical and Practical Treatise on Bridge Building, etc.." shall receive it monthly as published. To those making Mr. Duggan a present remittance of $9, the work will be forwarded post free to any part of the United States.

American Railway Guide,

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UNITED STATES;

CONTAINING Correct Tables, shownig the time for starting of trains from all stations, distances, fares, etc., on all the Railway lines in the U. States; also many of the principal Steamboat and Stage routes—accompanied by a complete RAILWAY MAP. Price, single copies 12½ cts., or $1 per annum. Published on the first of every month, corrected from returns furnished by the Railway Superintendents throughout the Union.

This book has been compiled somewhat on the plan of Bradshaw's Guide, with such improvements in size, form and arrangement as have seemed desirable; and the publisher confidently hopes it will not be found liable to the objections of incompleteness and incorrectness, which have been made, and justly too, against various other similar works heretofore issued.

The subscriber having had the management of the NEW YORK PATHFINDER almost from its commencement, has enjoyed superior facilities in obtaining information relating to the thoroughfares of travel, and is therefore well qualified to prosecute with success the arduous undertaking of furnishing a complete and correct national guide book.

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February 16, 1850. ly*

The above cement is used in most of the fortifications building by government.

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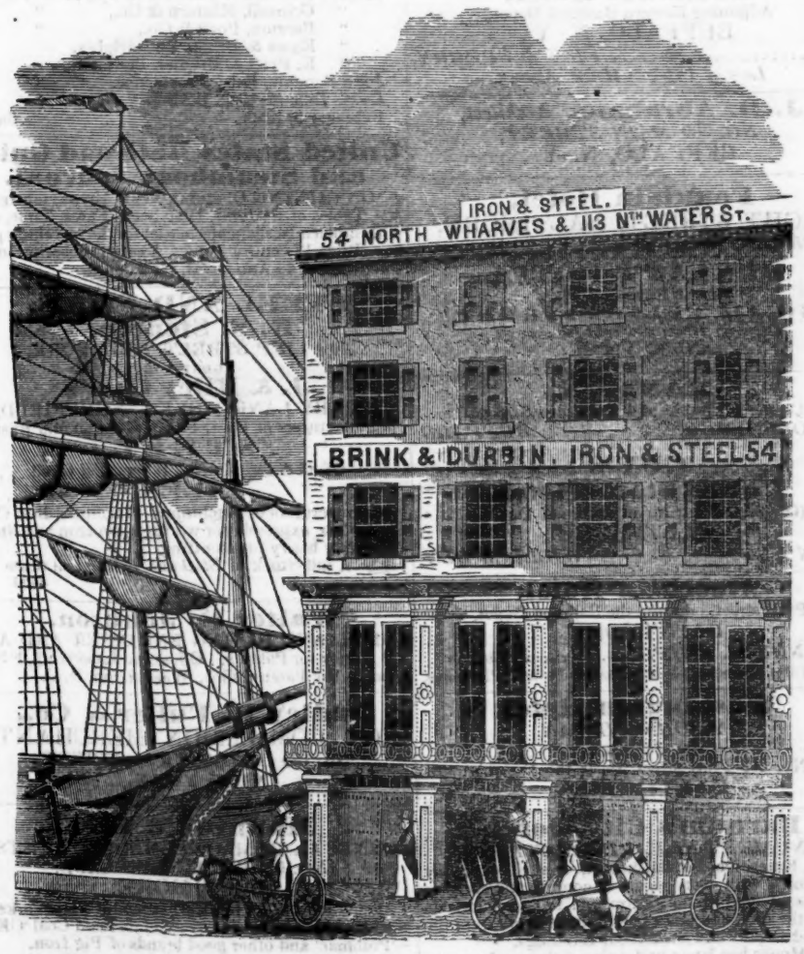
No. 40 Wall St., New York.

May 12, 1849. 1m19

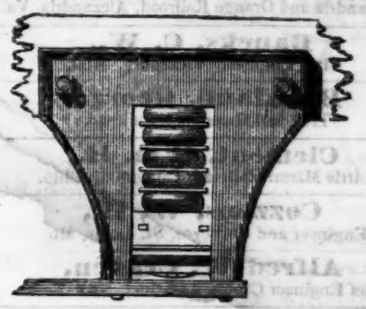


To Merchants, Railroad Companies, Machinists and Boiler Makers.

THE subscribers beg leave to call attention to their very large stock of *Iron* and *Steel*—of American, English, Swede and Norway make—of all the different kinds in use. Also, Railroad Iron, Ship, Boat and Railroad Spikes. They are also Agents for the *Best Pennsylvania Locomotive Boiler and Tank Iron*, each sheet of which will be *stamped and warranted*, at lowest mill prices. Our prices for all kinds of iron will be found *very low*, either for cash or approved credit.

BRINK & DURBIN, *Philadelphia.*

FULLER'S PATENT INDIA RUBBER SPRING.



THESE SPRINGS ARE THE CHEAPEST, the lightest and most durable of any yet known. They are easily applied to new or old cars, and there is small possibility of any accident occurring to them.

Other parties through Mr. Ray set up claims to an India Rubber Spring which, though the same in principle, is very inferior in its working and durability.—Actions are in progress for an Infringement on Fuller's Patent against parties using that Spring.

The superiority of Fuller's Spring over that claimed by Mr. Ray is fully established and has frequently been testified to. The following are from gentlemen who have had much experience with both Springs.

—

"It will afford me pleasure to recommend your springs to the companies in this region, in preference to Ray's which I am confident are inferior in mechanical arrangement to yours." JOHN M'RAE,
Engineer S. Carolina R. R., Charleston.

—

"I do not hesitate to allow you to say that I concur in Mr. M'Rae's opinion that Ray's springs are inferior in mechanical arrangement to Fuller's. I repeatedly expressed that opinion long before Mr. M'Rae had seen your springs (as I believe) and entertain it still." WM. PARKER,
Gen'l Supt. of Baltimore and Ohio R. R.

—

Office of Sup't Norwich & Worcester R.R Co.
December 26, 1849.

"I most fully concur in the opinion of Jno. McRae, Engineer of S. Carolina Railroad, that 'Rays Springs are inferior to Fuller's Springs;' and shall with pleasure recommend them to all Railroad Companies for adoption. I have used both springs on this road and have no hesitation in saying that I should in all cases prefer Fuller's Spring."

SAM'L H. P. LEE, JR.,
Sup't and Engineer.

—

Office B. & P. R. R. Co.,
Boston, 20th December, 1849.

"This company have cars fitted up with both Ray's and Fuller's 'Metallic India Rubber Springs,' and do not hesitate to say that Fuller's arrangement *very much superior* to Ray's.

W. RAYMOND LEE, Supt.

—

The following result has been obtained by experiment upon one railroad.

A set of Trucks fitted with Steel Springs cost	$190·77	and weigh	2365 lbs.
The same with Fuller's Springs, . . .	131·71	"	1911 lbs.
Difference, . .	$59·06	"	444 lbs.

Not only is there an advantage in the cost, but owing to the great reduction in weight, the car can be made lighter throughout, and so an enormous saving in weight may be effected in a Train.

AGENTS.
G. M. KNEVITT, 38 Broadway, N. Y.,
JOHN THORNLEY, 110 Chestnut St., Philad.
The BOSTON BELTING CO., Milk st., Boston.
January 2, 1850.

American Cast Steel.

THE ADIRONDAC STEEL MANUFACTURING CO. is now producing, from American iron, at their works at Jersey City, N.J., Cast Steel of extraordinary quality, and is prepared to supply orders for the same at prices below that of the imported article of like quality. Consumers will find it to their interest to give this a trial. Orders for all sizes of hammered cast steel, directed as above, will meet with prompt attention.

May 28, 1849.

ENGINEERS.

Atkinson, T. C.,
Alexandria and Orange Railroad, Alexandria, Va.

Bancks, C. W.,
Civil Engineer, Vicksburg, Miss.

Buckland, George,
Troy and Greenbush Railroad.

Clement, Wm. H.,
Little Miami Railroad, Cincinnati, Ohio.

Cozzens, W, H,,
Engineer and Surveyor, St. Louis, Mo.

Alfred W. Craven,
Chief Engineer Croton Aqueduct, New York.

Davidson, M. O.,
Eckhart Mines, Alleghany Co., Maryland.

Fisk, Charles B.,
Cumberland and Ohio Canal, Washington, D. C.

Felton, S. M.,
Fitchburgh Railroad, Boston, Mass.

Floyd-Jones, Charles,
South Oyster Bay, L. I.

Gzowski, Mr.,
St. Lawrence & Atlantic Railroad, Montreal, Canada.

Gilbert, Wm. B.,
Rutland and Burlington Railroad, Rutland, Vt.

Grant, James H.,
Nashville and Chattanooga R. R., Nashville, Tenn.

S. W. Hill,
Mining Engineer and Surveyor, Eagle River, Lake Superior.

Hewson, M. Butt,
Memphis, Tenn.

Holcomb, F. P.
Southwestern Railroad, Macon, Ga.

Johnson, Edwin F.
New York and Boston Railroad, Middletown Ct.

Latrobe, B. H.,
Baltimore and Ohio Railroad, Baltimore, Md.

Miller, J. F.,
Worcester and Nashua Railroad, Worcester, Mass.

Morris, Elwood,
Schuylkill Navigation, Schuylkill Haven, Pa.

Morton, A. C.,
Atlantic and St. Lawrence Railroad, Portland, Me.

McRae, John,
South Carolina Railroad, Charleston, S. C.

Nott, Samuel,
Lawrence and Manchester Railroad, Boston,

Prichard, M. B.,
East Tennessee and Georgia R. R., Cleveland, Tenn.

Roebling, John A.,,
Trenton, N. J.

W. Milnor Roberts,
Bellefontaine and Indiana Railroad, Marion, Ohio.

Roberts, Solomon W.,
Ohio and Pennsylvania Railroad, Pittsburgh, Pa.

Sanford, C. O.,
South Side Railroad, Virginia.

Schlatter, Charles L.,
Northern Railroad (Ogdensburg), Malone, N. Y.

Sours, Peter,
Rahway, New Jersey.

Stark, George.,
Bost., Con. and Mont. R. R., Meredith Bridge, N. H.

Steele, J. Dutton,
Pottstown, Pa.

Trautwine, John C.,
Panama Railroad—Address through office of Panama Railroad Co., 78 Broadway, N. Y.

Trimble, Isaac R.,
Philad., Wil. & Baltimore Railroad, Wilmington, Del.

Tinkham, A. W.,
United States Fort, Bucksport, Me.

Thomson, J. Edgar.,
Pennsylvania (Central) Railroad, Philadelphia.

Troost, Lewis,
Alabama and Tennessee Railroad, Selma, Ala.

Whipple, S.,
Civil Engineer and Bridge Builder, Utica, N. Y.

Williams, E. P.,
Auburn and Schenectady Railroad, Auburn, N. Y.

Williams, Charles H.,
Milwaukie, Wisconsin.

HOTELS.

Exchange Hotel,
Adjoining Eastern Railroad Depot,
BUFFALO, N. Y.
BY.....FISK & SPERRY,
Late of Delevan House, Albany.

J. D. Abraham, *Architect,*
NO. 300 *MAIN STREET,*
BFFFALO, N. Y.

Fountain Hotel,
LIGHT STREET, BALTIMORE,
P. THURSTON.....Proprietor.

DUNLAP'S HOTEL,
On the European Plan,
NO. 135 FULTON STREET,
Between Broadway and Nassau St.,
NEW YORK.

MANSION,
Corner of Maine and Exchange Streets,
P. DORSHIMER. *BUFFALO.*

GUY'S
United States Hotel,
(Opposite Pratt street Railroad Depot,)
BALTIMORE.
JOHN GUY. *WILLIAM GUY.*

American Hotel,
Pratt street, opposite the Railroad Depot,
BALTIMORE.
HENRY M. SMITH.....Proprietor.
Late of the Exchange & St. Charles Hotels, Pittsburg.

Washington Hotel,
BY JOHN GILMAN,
$1 *Per Day.*
No. 206 Pratt street, (near the Depot,)
BALTIMORE.

Barnum's City Hotel,
MONUMENT SQUARE, BALTIMORE.
This Extensive Establishment, erected expressly for a Hotel, with every regard to comfort and convenience, is situated in the centre and most fashionable part of the city, and but a few minutes' walk from the Railroad Depots and Steamboat Landings.
The House has lately undergone a thorough repair, embracing many valuable improvements, and will accommodate 250 Guests. BARNUM & CO.

JONES' HOTEL,
NO. 152 CHESTNUT STREET,
PHILADELPHIA.
BRIDGES & WEST, ... Proprietors.

BUSINESS CARDS.

Lithography.
JOHN P. HALL & CO.,
161 Main st., Buffalo, (Commercial Advertiser Build.)
Are prepared to execute all kinds of Lithography in good stole and at reasonable rates. Particular attention wil be paid to Engraving Railroad Maps, Engineer's Plans and drafts, etc., and orders in this line are respectfully solicited.

J. T. Hodge
Will attend to the examination of mining tracts near Lake Superior, and prepare Reports and Maps.
Address, during the Summer,
Ontanagon Postoffice, Lake Superior.

Cumberland Steam Coal,
FROM THE
FROSTBURG MINES, MD.
H. A. TUCKER,
Agent of Frostburg Coal Co.
No. 50 Wall Street, New York.

Eaton, Gilbert & Co.,
Railroad Car, Coach and Omnibus Builders,
TROY, N. Y.

Nathan Caswell,
METAL BROKER, 69 WALL ST., N.Y.
For the Purchase and Sale of Railroad Iron (new and old,) Boiler Plates, Pig and Bar Iron, Lead, Tin, Copper, Spelter, etc. Refers to
Messrs. Boorman, Johnston, & Co., New York.
" Grinnell, Minturn & Co., "
" Barston, Pope & Co., "
" Earps & Brink, Philadelphia.
" E. Pratt & Brother, Baltimore.
John Barstow, Esq., Providence.
Lewis Bullard, Esq., Boston.
February 9, 1850. 6m*

United States Railroad Guide and Steamboat Journal.
CONTAINING OFFICIAL TIME ADVERTISEMENTS, Tables of Stations, Distances, Fares, Time, etc., with much miscellaneous matter for the travelling public. Price 12 cents a copy. Yearly subscription $1. Published at 43 Ann street, New York.

STEEL AND FILES.
R. S. Stenton,
20 CLIFF STREET, NEW YORK,
AGENT FOR
J. & Riley Carr's
BAILEY-LANE WORKS, SHEFFIELD,
Manufacturers of Cast, Shear, German and Blister
STEEL
Of all descriptions. *Warranted* Good
FILES.
Manufacturers of Machinists' Warranted Best Cast Steel *Files*, expressly for woring upon Iron and Steel, made very heavy for recutting.
☞ A full Stock of *Steel* and *Files* at all times on hand. 6m4

Walter R, Johnson,
CIVIL AND MINING ENGINEER AND ATtorney for Patents. Office and Laboratory, F St., opposite the Patent office, Washington, D. C.

Dudley B. Fuller & Co.,
IRON COMMISSION MERCHANTS,
No. 139 GREENWICH STREET,
NEW YORK.

Manning & Lee,
GENERAL COMMISSION MERCHANTS,
NO. 51 EXCHANGE PLACE,
BALTIMORE.
Agents for Avalon Railroad Iron and Nail Works. Maryland Mining Company's Cumberland Coal 'CED —'Potomac' and other good brands of Pig Iron.

Cop Waste.
CLEAN COP WASTE, suitable for cleaning Railroad, Steamboat and Stationary Engines, constantly an hand and for sale by
KENNEDY & GELSTON,
5½ Pine St., New York.
October 27, 1849, 3m

Plushes for Railway Cars, Omnibuses, etc.

F. S. & S. A. MARTINE,

112 WILLIAM ST., NEAR JOHN.

ARE now receiving a large and complete assortment of Plain and Figured PLUSHES, of their own importation, which will be sold at the lowest market price, viz: Crimson, Maroon, Scarlet, Green, Blue, Purple, etc.

ALSO—CURLED HAIR, the best manufactured in market.

Samuel Kimber & Co., COMMISSION MERCHANTS

WILLOW ST. WHARVES, PHILADELPHIA.

AGENTS for the sale of Charcoal and Anthracite Pig Iron, Hammered Railroad Car and Locomotive Axles, Force Pumps of the most approved construction for Railroad Water Stations and Hydraulic Rams, etc., etc.

July, 27, 1849.

James Herron, *Civil Engineer*,

OF THE UNITED STATES NAVY YARD,
PENSACOLA, FLORIDA.,
PATENTEE OF THE
HERRON RAILWAY TRACK.

Models of this Track, on the most improved plans, may be seen at the Engineer's office of the New York and Erie Railroad.

To Railroad Companies.

—WROUGHT IRON WHEELS—
SAFETY AND ECONOMY.
NORRIS' LOCOMOTIVE WORKS,
SCHENECTADY, NEW YORK,

Are Manufacturing Wrought Iron Driving, Truck, Tender, and Car Wheels—made from the best American Iron. Address E. S. NORRIS.

May 16, 1849.

Manufacture of Patent Wire ROPE AND CABLES,

For Inclined Planes, Suspension Bridges, Standing Rigging, Mines, Cranes, Derrick, Tillers, &c., by
JOHN A. ROEBLING, Civil Engineer,
TRENTON, N. J.

Doremus & Harris,

ANALYTICAL & CONSULTING CHEMISTS,
179 BROADWAY, NEW YORK.
☞SCHOOL OF CHEMISTRY.☜

To Engineers and Surveyors.

E. BROWN AND SON Mathematical inst. makers No. 27 Fulton Slip, New York, make and keep for sale, Theodolites, Levelling inst., Levelling rods, Surveyors Compasses, and Chains, Cases of Mathematical drawing insts. various qualities, together with a general assortment of Ivory Scales and small insts. generally used by Engineers.

Ranstead, Dearborn & Co.,

MANUFACTURERS OF
LOCOMOTIVE CRANKS AND CAR AXLES,
ALSO
WROUGHT IRON SHAFTING,
And All Kinds of Hammered Shapes.

Forge at Commercial Point, Dorchester,
Office 25 Foster's Wharf, opposite No. 211 Broad St.
BOSTON.

Henry I. Ibbotson,

IMPORTER of Sheffield and Birmingham Goods. Also, Agent for the Manufacture of Telegraph Wire. 218 PEARL ST., NEW YORK.

Cumberland, (Md.,) Coals for Steaming, etc.

ORDERS RECEIVED FOR AND FILLED by J. COWLES, 27 Wall St., N. Y.

Samuel D. Willmott,

MERCHANT, AND MANUFACTURER OF
CAST STEEL WARRANTED SAWS,
—AND FILES—
IMPORTER OF THE
GENUINE WICKESRLY GRINDSTONES
NO. 8 LIBERTY STREET,
NEW YORK.

Railroad Instruments.

THEODOLITES, TRANSIT COMPASSES, and Levels, with Fraunhoffers Munich Glasses, Surveyor's Compasses, Chains, Drawing Instruments, Barometers, etc., all of the best quality and workmanship, for sale at unusually low prices, by
E. & G. W. BLUNT,
No. 179 Water St., cor. Burling Slip.
New York, May 19, 1849.

IRON.

Railroad Iron.

3,000 TONS C. L. MAKE 63½ lbs. per yard, now landing and to arrive.

Also contracts made for future delivery of above superior make English Iron.

300 Tons Banks Best Iron, Round, Square and Flat.
200 " English Bar " " " "
10 " 9-16 Square Iron for Railroad Spikes.

For sale in lots to suit purchasers by
DAVID W. WETMORE.
New York, March 26, 1850. 3m

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract to deliver Rails of superior quality, and of any size or pattern, to any ports of discharge in the United States.
COLLINS, VOSE & CO.,
74 South St.
New York, June 1, 1850.

Railroad Iron.

1,500 Tons weighing 58 lbs. per lineal yard.
500 " " 57 " "
500 " " 56 " "
500 " " 60 & 61 lbs, "

Also 2½x½ flat rails. All the above being of approved patterns. For sale by
DAVIS, BROOKS, & CO.,
68 Broad street.

N.B.—Rails imported on commission, or at a fixed price.

Iron.

Pig Iron, Anthracite and Charcoal; Boiler and Flue Iron, Spring and Blistered Steel, Nail Rods, Best Refined Bar Iron, Railroad Iron, Car Axles, Nails, Stove Castings, Cast Iron Pipes of all sizes, Railway Chairs of approved patterns' for sale by
COLEMAN, KELTON & CAMBELL,
109 N. Water St., Philadelphia.

IRONDALE PIG METAL, MANUFACTURED and for sale by the Bloomsburg Railroad Iron Co.
LINDLEY FISHER, Treasurer.
75 N. Water St., Philadelphia.

Railroad Iron.

2000 Tons, weighing 58 pounds per lineal yard, of the most approved pattern of T rails, in store and to arrive, for sale by
COLLINS, VOSE & CO.,
74 South St.
New York, June 1, 1850.

Railroad Iron.

1650 Tons, weighing about 61 lbs. per yard, 40 tons, weighing about 52 lbs. per yard, and 825 tons, weighing about 53½ lbs. per yard, of the latest and most approved patterns of T rail, for sale by
BOORMAN, JOHNSTON & CO.,
119 Greenwich street.
New York, Aug. 26, 1850.

N.B.—B., J. & Co are also prepared to take contracts for English rails, delivered in any of the Atlantic ports of the United States.

Railroad Iron.

THE UNDERSIGNED, HAVING made arrangements abroad, are prepared to contract for the delivery of Foreign rails, of approved brands upon the most favorable terms.

They will also make contracts for American rails, made at their Trenton works, from Andover Iron, in whole or in part, as may be agreed upon.

They are prepared to furnish Telegraph, Spring and Market Wire; Braziers and Wire Rods; Rivets and Merchant Bars to order, all made exclusively from Andover Iron. The attention of parties who require iron of the *very best* quality for special purposes, is respectfully invited. COOPER & HEWITT,
17 Burling Slip, New York.
February 15, 1850.

Glendon Refined Iron.

Round Iron, Band Iron, Hoop Iron,
Square " Flat " Scroll "
Axles, Locomotive Tyres,

Manufactured at the Glendon Mills, East Boston, for sale by GEORGE GARDNER & CO.,
5 Liberty Square, Boston, Mass.
Sept. 15, 1849. 3m37

PATENT HAMMERED RAILROAD, SHIP & BOAT SPIKES.—The Albany Iron Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes from 2 to 12 inches in length, and of any form of head. From the excellence of the material always used in their manufacture, and their very general use for railroads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscribers at the works will be promptly executed.
JOHN F. WINSLOW, *Agent.*
Albany Iron and Nail Works, Troy, N. Y.

The above Spikes may be had at factory prices, of Erastus Corning & Co Albany; Merritt & Co., New York; E. Pratt & Brother, Baltimore, Md

LAP—WELDED WROUGHT IRON TUBES FOR TUBULAR BOILERS,

FROM ONE AND A QUARTER TO SEVEN INCHES IN DIAMETER.

THE ONLY Tubes of the same quality and manufacture as those so extensively used in England, Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.
THOMAS PROSSER & SON, Patentees,
28 Platt street, New York.

Railroad Iron.

THE UNDERSIGNED ARE PREPARED TO contract for the delivery of English Railroad Iron of favorite brands, during the Spring. They also receive orders for the importation of Pig, Bar, Sheet, etc. Iron. THOMAS B. SANDS & CO.,
73 New street,
February 3, 1849. New York.

Iron Store.

THE Subscribers, having the selling agency of the following named Rolling Mills, viz: Norristown, Rough and Ready, Kensington, Triadelphia, Pottsgrove and Thorndale, can supply Railroad Companies, Merchants and others, at the wholesale mill prices for bars of all sizes, sheets cut to order as large as 58 in. diameter; Railroad Iron, domestic and foreign; Locomotive tire welded to given size; Chairs and Spikes; Iron for shafting, locomotive and general machinery purposes; Cast, Shear, Blister and Spring Steel; Boiler rivets; Copper; Pig iron, etc., etc.
MORRIS, JONES & CO.,
Iron Merchants,
Schuylkill 7th and Market Sts., Philadelphia.
August 16, 1849. 1y33

Railroad Iron.

THE MOUNT SAVAGE IRON WORKS, Alleghany county, Maryland, having recently passed into the hands of new proprietors, are now prepared, with increased facilities, to execute orders for any of the various patterns of Railroad Iron. Communications addressed to either of the subscribers will have prompt attention. J. F. WINSLOW, *President*
Troy, N.Y.
ERASTUS CORNING, Albany.
WARREN DELANO, Jr., N.Y.
JOHN M. FORBES, Boston.
ENOCH PRATT, Baltimore, Md.
November 6, 1848.

Railroad Iron.

THE SUBSCRIBERS ARE PREPARED TO take orders for Railroad Iron to be made at their Phœnix Iron Works, situated on the Schuylkill River, near this city, and at their Safe Harbor Iron Works, situated in Lancaster County, on the Susquehannah river; which two establishments are now turning out upwards of 1800 tons of finished rails per month.

Companies desirous of contracting will be promptly supplied with rails of any required pattern, and of the very best quality.
REEVES, BUCK & CO.
45 North Water St. Philadelphia,
March 15, 1849.

Monument Foundry.

A. & W. DENMEAD & SON,
Corner of North and Monument Sts.,—Baltimore,
HAVING THEIR
IRON FOUNDRY AND MACHINE SHOP
In complete operation, are prepared to execute faithfully and promptly, orders for
Locomotive or Stationary Steam Engines,
Woolen, Cotton, Flour, Rice, Sugar Grist, or Saw Mills,
Slide, Hand or Chuck Lathes,
Machinery for cutting all kinds of Gearing.
Hydraulic, Tobacco and other Presses,
Car and Locomotive patent Ring Wheels, warranted,
Bridge and Mill Castings of every description,
Gas and Water Pipes of all sizes, warranted,
Railroad Wheels with best faggotted axle, furnished and fitted up for use, complete

☞Being provided with Heavy Lathes for Boring and Turning Screws, Cylinders, etc., we can furnish them of any pitch, length or pattern.

☞ Old Machinery Renewed or Repaired—and Estimates for Work in any part of the United States furnished at short notice.

June 8, 1849.

Iron Wire.

REFINED IRON WIRE OF ALL KINDS, Card, Reed, Cotton-flyer, Annealed, Broom, Buckle, and Spring Wire. Also all kinds of Round, Flat or Oval Wire, best adapted to various machine purposes, annealed and tempered, straightened and cut any length, manufactured and sold by

ICHABOD WASHBURN.

Worcester, Mass., May 25, 1849.

Wheel, Forge and Foundry Iron.

LOCUST GROVE Wheel Iron of great strength and superior chilling property.

Balt. Charcoal Forge Iron, from Patuxent, Curtis Creek and Gunpowder furnaces.

Elkridge Foundry Iron, of superior strength and softness. Anthracite and Charcoal Iron from Pennsylvania and Virginia. Gas and Water Pipes, Lamp Posts from Elkridge furnace.

LEMMON & GLENN,
6m9 62 Buchanan's Wharf, Baltimore.

S. S. Keyser & Co., IRON WAREHOUSE,

Corner of Sout i and Pratt Streets,
BALTIMORE, MD.

Selling Agents for the Rough and Ready Bar Iron and Elk Boiler and Flue Iron Rolling Mills, Sarah and Taylor Furnaces, and Wrightsville Hollow Ware Foundry, and Dealers in Bar and Sheet Iron, and Cast, Sheer, German, Blister, Spring and Electerised Steel, etc., etc.

Smith & Tyson,

GENERAL COMMISSION MERCHANTS,
No. 25 South Charles St., Baltimore, Md.

AGENTS for the Celebrated Columbia Pig Iron, suitable for Car Wheels and Chilled Rolls.

Columbia refined Charcoal Blooms; Refined Charcoal Juniatta Billet Iron for Wire; Refined Iron for Bridging, of great strength; Cut Nails, Spikes, and Brads; Railroad Spikes and Wrought Chairs. 22tf

Stickney & Beatty,

DEALERS IN IRON AND IRON MANUFACTURERS.

AGENTS for the Balt. City Rolling Mill, from which establishment they are prepared to furnish Ellicott's round, square, and flat bar iron, puddled and charcoal boiler plates and billet iron—also agents for the sale of the Laurel and Maryland (Balt.) charcoal forge pig irons, Balt. hard iron for chilling wheels, anti-Eatam nails, Catoctin foundry iron, boiler blooms from the Caledonian works, Wm. Jessop & Son's cast steel, Coleman's blister steel and nail rods, hoop, band, sheet, oval and common English iron.

Nos. 18 and 20 South Charles st., Baltimore.

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway Iron, at any port in the United States, at fixed prices, and of quality tried and approved for many years, on the oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff st.

Iron.

THE SUBSCRIBERS having resumed the agency of the New-Jersey Iron Company, are prepared to execute orders for the different kinds and sizes of Iron usually made at the works of the company, and offer for sale on advantageous terms.—

150 tons No. 1 Boonton Foundry Pig Iron.
100 " No. 2 do. do. do.
300 " Nos. 2 & 3 Forge do. do.
100 " No. 2 Glendon do. do.
140 " Nos. 2 & 3 Lehigh Crane do do.
100 " No. 1 Pompton Charcoal do.
100 " New-Jersey Blooms
50 " New-Jersey Faggoting Iron, for shafts

Best Bars, ½ to 4 inch by ½ to 1 inch thick.
Do do Rounds and Squares, ½ to 3 inch.
Rounds and Squares, 3-16 to 1 inch.
Half Rounds, ½ to 1 in. Ovals & Half Ovals ½ to 1½ in.
Bands, 1½ to 4 inch. Hoops, ½ to 2 inch.
Trunk Hoops, ½ to 1½ in. Horse Shoe & Nut Iron.
Nail Plates. Railroad Spikes.

DUDLEY B. FULLER & Co., 139 Greenwich-st. and 85 Broad-st.

WILLIAM JESSOP & SONS' CELEBRATED CAST-STEEL.

The subscribers have on hand, and are constantly receiving from their manufactory,
PARK WORKS, SHEFFIELD,
Double Refined Cast Steel—square, flat and octagon.
Best warranted Cast Steel—square, flat and octagon.
Best double and single Shear Steel—warranted.
Machinery Steel—round.
Best and 2d gy. Sheet Steel—for saws and other purposes.
German Steel—flat and square, "W. I. & S." "Eagle" and "Goat" stamps.
Genuine "Sykes," L Blister Steel.
Best English Blister Steel, etc., etc., etc.

All of which are offered for sale on the most favorable terms by WM. JESSOP & SONS,
91 John street, New York.

Also by their Agents—
Curtus & Hand, 47 Commerce street, Philadelphia.
Alex'r Fullerton & Co., 119 Milk street, Boston.
Stickney & Beatty, South Charles street, Baltimore.
May 6, 1848.

JOHNSON, CAMMELL & Co's Celebrated Cast Steel,

AND
ENGINEERING AND MACHINE FILES,

which for quality and adaptation to mechanical uses, have been proved superior to any in the United States. Every description of square, octagon, flat and round cast steel, sheet, shovel and railway spring steel, best double and single shear steel, German steel, flat and square, goat stamps, etc. Saw and file steel, and steel to order for any purposes, manufactured at their Cyclops Steel Works Sheffield.

JOHNSON, CAMMELL & CO.,
100 William St., New York.

November 23 1849.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract for the delivery of English, Welsh and Scotch Rails, of any pattern and weight, also for every description of English, Welsh, Scotch, and Swedish Iron, Railway Chairs and Spikes, Rivets, Bolts, Nuts, Washers, Chain Cables, Anchors, Tin Plates, German Spelter, Iron Castings, and every description of Machinery.

WILLIAM BIRD & CO.,
Iron and Tin Plate Merchants,
44 Wall st., New York.
And at 5 Martin's Lane, City, London,
and 140 Buchanan st., Glasgow.

July 27th, 1850.

To the Proprietors of Rolling Mills and Iron Works.

THE Undersigned—Proprietors of Townsend's Furnace and Machine Shop, Albany—are extensively engaged in the manufacture of Machinery and fixtures for Iron, and Copper Rolling Mills, and Iron Works. Having paid particular attention to the manufacture of *Rolls* (Rollers), both *chilled* and *dry-sand*, they feel confident that they can execute orders for such castings in a satisfactory manner. And to give assurance of this, they beg leave to refer to the following named persons, proprietors and managers of some of the most extensive rolling mills in the country, viz: Jno. F. Winslow, J. Tuckerman, H. Burden, W. Burtt, J. & J. Rogers, Saltus & Co., J. B. Bailey, L. G. B. Cannon, Hawkins & Atwater, etc., etc.

F. & T. TOWNSEND.

Albany, August 18, 1849.

Railroad Iron.

B. O. Railway Tires, Railway Wheels,
Scotch Pig Iron, Tin Plates and Banca Tin,
Muntzs Patent Metal Sheathing,
Baltimore Copper.

Contracts for Rails made on behalf of the manufacturers, for delivery at any ports in the United States, at fixed prices.

Bowling Tires and Tire Bars and Scotch Pigs imported to order.

Muntz's Ship-sheathing, and a general stock of Tin Plates and Banca Tin in store, and for sale by

RAYMOND & FULLERTON, 45 Cliff st.

Bowling Iron. Stamped B.O.

Railway Tire Bars	Rivet Iron
Locomotive and other Axles	Locomotive Frame do
Boiler Plates	Bars,

and every other description of this superior Iron.

The subscribers, agents for the sale of Bowling Iron, are prepared to execute orders for importation, especially for railway and machinery uses, with despatch from the manufacturers.

RAYMOND & FULLERTON, 45 Cliff st.

Lovegrove's Patent Cast Iron Water and Gas Pipes.

THE Subscriber, the Inventor and Patentee of the Centrifugal mode of giving form to metallic substances while in a molten state, is preparing to make Cast Iron Water and Gas Pipes, of any dimensions, at prices much lower than they can be made in the old manner, and the pipes warranted to stand a pressure of three hundred pounds to the square inch, and to be soft enough to drill. Steam Engines and all kinds of machinery. Cast Iron Doors and Frames, and Mill Castings of every description, made to order.

THOMAS LOVEGROVE,
Machinist and Founder,
West Falls Avenue, below Pratt st., Baltimore.

Ray's Patent India Rubber Car Springs.

Savannah, Ga., May 22, 1850.

FOWLER M. RAY, Esq.,

Dear Sir: I have no hesitation in saying, after having used on our road your springs and Fuller's, that I consider yours decidedly the best in every particular, and in this opinion I am sustained by all our officers. Fuller's spring has a tendency to split, and also to chafe or abrade by the constant friction on the cast iron plates or disc: and in my opinion is not near so elastic as yours.

Your springs, which have been in use on our road for 12 or 15 months past, and in constant use under both passenger and freight cars, are to all appearances as elastic, sound and good, as when first put in use.

We are now building eigty-five new cars, of which for fifty-sets the springs have been ordered of you.

GEORGE A. ADAMS,
Master Carpenter,
Central Railroad and Banking Co. of Georgia.

Connecticut River Railroad Office,
Northampton, May 4, 1850.

E. CRANE, Esq.,

Dear Sir: It is now about two years since I first tried the experiment of using a set of Ray's India-rubber Springs upon one of our merchandise cars, and although the car has been in constant service since that time, I do not on examination find the slightest difference either in the thickness or elasticity of the material.

The same result has followed wherever we have applied them, either for wheel or draw springs on Engines, Tenders or Cars. At present we use no other; either in replacing old springs or building new cars—and I am perfectly satisfied that for economy, durability, safety, and ease of motion, that Ray's India-rubber is the best article for Springs which has been presented to the public.

Yours respectfully, J. HUNT,
Supt. Connecticut River Railroad.

EDWARD CRANE, Esq.,

Dear Sir: Having applied to cars of the Boston and Worcester Railroad Corporation, Ray's Vulcanised Rubber Springs (where they have been in use for some two years last past), I have had occasion to observe their operation, and am free to say in answer to your inquiries, that they retain their *elasticity* perfectly during all changes of atmospheric temperature: and are in my opinion a most valuable acquisition to Railroad Cars—are not liable to derangement, as is the case with steel springs; while at the same time it costs less to apply them. Respectfully yours,

D. N. PICKERING,
Supt. Motive Power, Bost. & Wor. Railroad.
Boston, April 15th, 1850.

FARMERS! ATTENTION!!

John Mayher & Co's
NEW AGRICULTURAL WAREHOUSE AND SEED STORE,
197 WATER STREET, NEW YORK.

Where they have for Sale, the largest and most complete assortment of Farming Implements, ever offered for sale in this city—all of which they will sell 10 per cent. Cheaper than the same kind of Goods can be bought at any other house in the city. Our Goods are all Warranted to give satisfaction.

FARMERS wanting to purchase, will please call and examine our *Stock* before buying elsewhere.

Among our assortment may be found the Celebrated Highest Premium Eagle Ploughs! together with all the most approved Ploughs now in use.

Also,—Horse Powers, Threshing Machines, Fan Mills, Corn Shellers, Straw Cutters, Corn Mills, Seed Sowers, Churns, Ox Yokes, Ox Scrapers, Hay Rakes, Horse Rakes, Patent Chain Pump (that never freezes nor rusts), and other Pumps; in fact we have everything for Farming Purposes—together with Guano, Bone Dust and other Fertilizers.

JOHN MAYHER & CO.,
197 Water st., N. Y.

February 9, 1850.

N.B.—J. M. & Co. also continue their Old Stand, at 195 Front street, near Fulton Market.

RAILROAD CAR AND COACH TRIMMINGS.

Doremus & Nixon,
IMPORTERS AND FURNISHERS
HAVE FOR SALE

Plain Garnet Plush.	Fig. Garnet Plush (Butterfly pat.
" Crimson "	" Crimson " (Elegant.
" Scarlet "	" " " (Gen. Taylor.

BROCATELLES.

Crimson Silk Brocatelles.	Gold and Maroon do.
Gold and Blue "	" Brown "
Silk and Wool "	of every color.

MOQUETTS,
Of elegant designs and colors.
GERMAN CLOTH FOR CAR LININGS.

The most beautiful goods ever shown in this country, and the subscribers are the sole agents for the sale of them.

Oil cloths Enamelled with Gold. } These goods can be
" " Silver. } furnished in any
Do. Silver ground velvet printed. } dimensions req'd.

CURLED HAIR
Of every description and quality.

JNO. W. A. STRICKLAND, Agent.
New York, 1850. 1y16

FOWLER M. RAY'S
Patent India-rubber Railroad CAR SPRING.

New York and Erie Railroad Shops.
Piermont, March 26, 1850.

This will certify that from practical experience in the use of Fowler M. Ray's India rubber Car Springs, I believe them to be far superior to any others now in use.

I have never known them to be affected by any change of temperature, as other Rubber Springs have been affected on this road.

I am at the present time repairing a Passenger Car that Mr. Ray and myself mounted with his springs about two years and eight months since.

The springs are at the present time as perfect, to all appearances, as when first applied to the car.

Respectfully yours,
HORACE B. GARDNER,
Foreman of the Car Shops.

—

Supt. Office N.Y. & H. R.R.,
New York, March 8, 1850.

This is to certify that we have used the Rubber Springs manufactured by Mr. F. M. Ray for the past twenty months, "both for Passenger and Freight Car Springs and Bumpers, and of different sizes," and have in every case given entire satisfaction, and I consider them the best spring now in use

M. SLOAT, Supt.

—

Boston, March 5, 1850.

In answer to your enquiry about India-rubber Springs, I have to say that we have used them to a considerable extent on both freight and passenger cars, and also on several of our tenders; and I am very well satisfied that they answer all the purposes for which they are intended. I believe the India-rubber will soon supersede all other springs for cars and tenders.

Yours truly, S. M. FELTON,
Supt. Fitchburg Railroad.

Office New Jersey Railroad Co.,
Jersey City, March 8, 1850.

FOWLER M. RAY, Esq.,

Dear Sir: In answer to your enquiries respecting the operation of the Vulcanised Rubber Springs, purchased by our company from you some two years since, I reply that they are superior to any spring in use, (that I have either seen or heard of).

The improved form of your spring, consisting of a solid piece of vulcanised rubber with bands on the outside, is far superior to your first form, consisting of disks of rubber with metallic plates interposed.

The last named form was tried, if you recollect, at a much earlier period; and then was replaced by your last form.

I have no hesitation in saying that your springs have given entire satisfaction, and most cheerfully recommend them to railroad companies throughout the country for the following reasons:

1st. The cost is 30 per cent. less.

2d. Saving of weight on each car of 8 wheels from 700 to 800 lbs.

3d. Less care and attention is required, as they are not liable to get out of repair.

4th. A great saving is secured in the wear and tear of the cars and rails from their great elasticity.

5th. The freedom from noise.

6th. There is greater safety in case of accident, as they cannot be broken.

7th. The comfort of passengers is enhanced sufficiently to pay the expense, waiving all the other reasons that I have given.

Should this fail to satisfy any person enquiring, you are at liberty to refer to me, No. 150 Washington St., Jersey City. Yours respectfully,

T. L. SMITH, Supt.

—

New York, March 11, 1850.

I have used the Patent India-rubber Spring purchased of Mr. Ray, upon the cars of the New York and New Haven Railroad, and have found them efficient and economical; and when applied to the axles and draw springs, believe them to be quite equal to any in use. I have found a combination of these springs with a steel spring under the transom beam a very satisfactory arrangement, and am now using this plan in all new cars. Yours respectfully,

ROBERT SCHUYLER.

—

February 25, 1850.

From practical observation of the use of the India-rubber Car Springs, manufactured and sold by your company, we are entirely satisfied in their application, and do not hesitate to recommend them as elastic, durable, requiring no repairs for years, and retaining their consistency during all extremes of weather. We have applied them for the past two years, and consider them superior for all railroad purposes.

Yours truly,
OSGOOD BRADLEY, Car Builder, Worcester.
T. & C. WASON, do. Springfield.
DEAN, PACKARD & MILLS, do. do.
DAVENPORT & BRIDGES, do. Cambridgeport.

—

Office of the New Jersey Railroad Co.,
Jersey City, March 7, 1850.

This is to certify that we have had Mr. F. M. Ray's India-rubber Springs in constant use under our cars, and as Bumper Springs for upwards of two years, and they have in every way given perfect satisfaction.

The present form of spring we deem far superior to the form of Disk, having used both forms, although we have none of those made in Disks at present in use.

We take pleasure in recommending these springs to all railroad companies.

J. P. JACKSON, Vice Prest.
New Jersey Railroad and Trans. Co.

—

Roxbury, February 28, 1850.

In compliance with your request, I take great pleasure in stating the result of my experience in the use of "Ray's Patented Vulcanised India-rubber Car and Engine Springs." We have used them nearly two years, and never had one fail in any way. The *cold weather* does not affect *them*, as it has *other* rubber springs we have used.

With sixteen years' experience as superintendent of machinery on the Boston and Providence railroad, I take pleasure in saying that your springs are the best we ever used, or I ever saw used elsewhere. We have 20 cars rigged with them, of which I can say that the springs are as good now as when first applied. I put 24 lbs. of the rubber under the forward end of one of our heaviest engines, taking off 250 lbs. of steel springs—it has been in use 18 months, and is in as good condition now as when first put under the engine.

Very respectfully yours,
GEO. S. GRIGGS,
Supt. of Machinery, Boston and Prov. R.R.

Fall River, February 2, 1850.

In answer to yours of the 20th ult. I would say that this company has for some 10 or 12 months past been using "Ray's India-rubber Springs." We have applied them to both passenger and freight cars with uniform success. They have invariably preserved their elasticity and consistency through all the extremes of weather; and we are now applying them whenever the steel spring fails. I am well satisfied that they are particularly adapted for railroad purposes.

Very respectfully yours,
GEO. HAVEN,
Supt. Fall River Railroad.

—

Jersey City, March 9, 1850.

This is to certify that the present form of Mr. F. M. Ray's India-rubber Car Spring I consider far superior to the form of Disk, having used both forms.

I take pleasure in recommending these springs to al railroad companies. DAVID H. BAKER,
Foreman of Car Shop of N.J. R.R. & Trans. Co

—

Harlem R.R. Depot,
New York, March 7, 1850.

This is to certify that we have used Mr. F. M. Ray's India-rubber Springs for over eighteen months, and find them to be easy and durable, and recommend them to railroad companies as being superior to anything we have tried. J. M. SMART,
Foreman at 42d St. Depot.

—

Old Colony Railroad Office,
Boston, March 6, 1850.

EDWARD CRANE, Esq.,
President New England Car Co.,

Dear Sir: In compliance with your request I would state that the Old Colony Railroad Comp'y have had in use upon their road, India-rubber Springs furnished by your company, for more than eighteen months past, during which time they have been extensively used under Passenger and Freight Cars, Locomotive Tenders, and for Drawer and Buffing Springs, with the most perfect success. The elasticity and consistency of the Rubber has never been unfavorably affected by either extremes of heat or cold—and from the experience which we have had in the use of Rubber Springs, I think them well adapted for railroad purposes—and therefore we have for some months past used Rubber almost exclusively, in all places where springs are required.

Respectfully yours, etc.,
JAS. H. MOORE,
Supt. O. C. Road.

—

Troy, February 27, 1850.

We have been using your India-rubber Car Springs for nearly two years—and we take pleasure in saying that in our opinion the rubber has to a certain extent already, and may eventually entirely supersede all other Springs for Railroad Car purposes. We now use it entirely for Draw Springs and Bumpers, considering it better and lighter than steel.

During our two years' experience in the use of it, we have not known any to lose their elasticity, or fail in any way; and we cheerfully recommend the rubber for railroad car springs. Very respectfully,

EATON, GILBERT, & CO.

Passenger Car Linings.

THE Advertiser continues to make to order the Enamelled Car Linings which have been so highly approved the last three years, and are now exclusively used by all the Northern Railroads. No pains are spared to get out new styles, and adapt them to the tastes of every consumer.

Orders addressed to CHARLES STODDER, No. 75 Kilby street, Boston, will have prompt attention.

March 23, 1850. 2m

India-rubber for Railroad Cos.

RUBBER SPRINGS—*Bearing and Buffer—Fuller's Patent—Hose* from 1 to 12 inches diameter. Suction Hose. *Steam Packing*—from 1-16 to 2 in. thick. *Rubber and Gutta Percha Bands.* These articles are all warranted to give satisfaction, made under Tyer & Helm's patent, issued January, 1849.—No lead used in the composition. Will stand much higher heat than that called "Goodyear's," and is in all respects better than any in use. Proprietors of railroads do not be overcharged by pretenders.

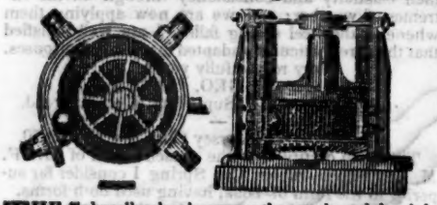
HORACE H. DAY,
Warehouse 23 Courtlandt street.
New York, May 21, 1849.

Spikes, Spikes, Spikes.

ANY person wishing a simple and effective Spike Machine, or a number of them, may be supplied by addressing J. W. FLACK,
March 6, 1850. Troy, N. Y.

MACHINERY.

Henry Burden's Patent Revolving Shingling Machine.



THE Subscriber having recently purchased the right of this machine for the United States, now offers to make transfers of the right to run said machine, or sell to those who may be desirous to purchase the right for one or more of the States.

This machine is now in successful operation in ten or twelve iron works in and about the vicinity of Pittsburgh, also at Phœnixville and Reading, Pa., Covington Iron Works, Md., Troy Rolling Mills, and Troy Iron and Nail Factory, Troy, N. Y., where it has give universal satisfaction.

Its advantages over the ordinary Forge Hammer are numerous: considerable saving in first cost; saving in power; the entire saving of shingler's, or hammersman's wages, as no attendance whatever is necessary, it being entirely self-acting; saving in time from the quantity of work done, as one machine is capable of working the iron from sixty puddling furnaces; saving of waste, as nothing but the scoria is thrown off, and that most effectually; saving of staffs, as none are used or required. The time required to furnish a bloom being only about six seconds, the scoria has no time to set, consequently is got rid of much easier than when allowed to congeal as under the hammer. The iron being discharged from the machine so hot, rolls better and is much easier on the rollers and machinery. The bars roll sounder, and are much better finished. The subscriber feels confident that persons who will examine for themselves the machinery in operation, will find it possesses more advantages than have been enumerated. For further particulars address the subscriber at Troy, N. Y. P. A. BURDEN.

Railroad Spikes and Wrought Iron Fastenings.

THE TROY IRON AND NAIL FACTORY, exclusive owner of all Henry Burden's Patented Machinery *for making Spikes*, have facilities for manufacturing large quantities upon short notice, and of a quality unsurpassed.

Wrought Iron Chairs, Clamps, Keys and Bolts for Railroad fastenings, also made to order. A full assortment of Ship and Boat Spikes always on hand.

All orders addressed to the Agent at the Factory will receive immediate attention.

P. A. BURDEN, *Agent*,
Troy Iron and Nail Factory, Troy, N. Y.

CHILLED RAILROAD WHEELS.—THE UNdersigned are now prepared to manufacture their Improved Corrugated Car Wheels, or Wheels with any form of spokes or discs, by a new process which prevents all strain on the metal, such as is produced in all other chilled wheels, by the manner of casting and cooling. By this new method of manufacture, the hubs of all kinds of wheels may be made whole—that is, without dividing them into sections—thus rendering the expense of banding unnecessary; and the wheels subjected to this process will be much stronger than those of the same size and weight, when made in the ordinary way.

A. WHITNEY & SON,
Willow St., below 13th,
Philadelphia, Pa.

Brown's Old Established SCALE WARE HOUSE,

NO. 234 WATER ST., NEW YORK.

THE Subscriber, Practical Manufacturer of Scales of every description, respectfully asks the attention of Railroad Companies to his Improved Wrought Iron Railroad Track and Depot Scales which for strength, durability, accuracy, convenience in weighing, and beauty of workmanship, are not surpassed by any others in this country.

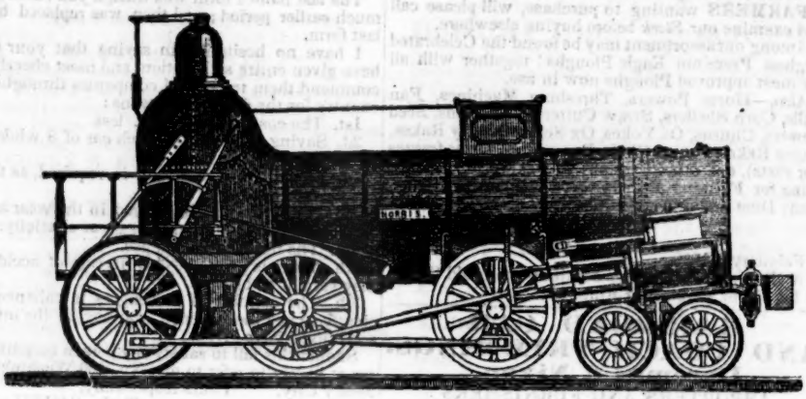
He is aware that this is rather a bold assertion for him to make, yet he can say with confidence that they have but to be tried to give them precedence over all others. J. L. BROWN.

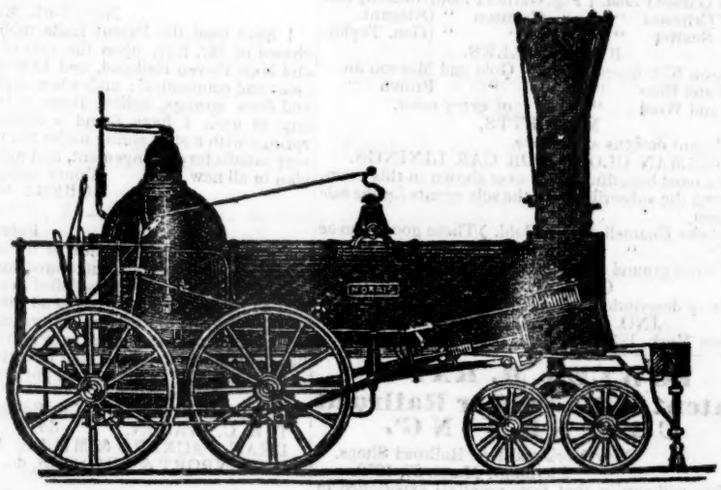
☞ Bank Scales made to order, and all Scales of his make Warranted in every particular.

References given if required

NORRIS' LOCOMOTIVE WORKS.

BUSHHILL, SCHUYLKILL SIXTH-ST., PHILADELPHIA,





THE UNDERSIGNED Manufacture to order Locomotive Steam Engines of any plan or size.

Their shops being enlarged, and their arrangements considerably extended to facilitate the speedy execution of work in this branch, they can offer to Railway Companies unusual advantages for prompt delivery of Machinery of superior workmanship and finish.

Connected with the Locomotive business, they are also prepared to furnish, at short notice, Chilled Wheels for Cars of superior quality.

Wrought Iron Tyres made of any required size—the exact diameter of the Wheel Centre, being given, the Tires are made to fit on same without the necessity of turning out inside.

Iron and Brass castings, Axles, etc., fitted up complete with Trucks or otherwise.

NORRIS, BROTHERS

PATENT MACHINE MADE HORSE-SHOES.

The Troy Iron and Nail Factory have always on hand a general assortment of Horse Shoes, made from Refined American Iron.

Four sizes being made, it will be well for those ordering to remember that the size of the shoe increases as the numbers—No. 1 being the smallest. P. A. BURDEN, *Agent*,
Troy Iron and Nail Factory, Troy, N. Y.

Etna Safety Fuse.

THIS superior article for igniting the charge in wet or dry blasting, made with DUPONT'S best powder, is kept for sale at the office and depot of

REYNOLDS & BROTHER,
☞ *Sole Manufacturers*, ☜
No. 85 Liberty St.
NEW YORK.

And in the principal cities and towns in the U. States.

☞ The Premium of the AMERICAN INSTITUTE was awarded to the *Etna Safety Fuse* at the late Fair held in this city.

November 3, 1849. 1y

COLUMBUS, OHIO,

Railroad Car Manufactory. RIDGWAYS & KIMBALL,

HAVE established at this central point, the manufacture of Passenger, Freight, Gravel and Hand Cars for Railroads, and assure all Western Railroad Companies that it will be their constant aim to procure the best materials and workmen, and to turn out the best kind of work at fair prices. Specimens may be seen on the Columbus and Xenia Railroad. The patronage of Railroad Companies is respectfully solicited. 1y8

To Inventors and Patentees.

OWEN G WARREN, ARCHITECT, Has had many years' experience as Agent for obtaining Patents, both in this country and Europe, and will transact such business promptly and reasonably. Persons at a distance can have their business done by correspondence—without the necessity of visiting this city or Washington. Office No. 94 Merchants Exchange, Wall st., corner of Hanover st., up stairs. 1y3

Mr. Hale:—"The New England Car Co., having been engaged for the last six months in introducing the Vulcanized India-rubber Car Spaings upon the different railroads in this and other states, and having in particular introduced it upon the Boston and Worcester railroad with perfect success, were much gratified to find, by your paper of this morning, that the article had given satisfaction to the president of that corporation, and the terms of just commendation in which you were pleased to speak of it. But their gratification was scarcely equalled by their surprise, when, on arriving at the close of your paragraph, they found the results of all their labors attributed to a foreign source, with which the New England Car Co. has no connection. The material used on the Boston and Worcester railroad, and all the other railroads in this country, where any preparation of India-rubber has been successfully applied, is entirely an American invention, patented in the year 1844 to Charles Goodyear, of New Haven, Conn., and the application of it to this purpose and the form in which it is applied are the invention of F. M. Ray of New York. The only material now in use, and so far as has yet appeared, the only preparation of India rubber capable of answering the purpose, has been furnished under these patents by the New England Car Company, manufactured under the immediate inspection of their own agent. If any other should be produced, the right to use it would depend upon the question of its interference with Mr. Goodyear's patent. The New England Car Company have their place of business in this city at No. 99 State street, and are prepared to answer all orders for the Vulcanised India rubber Car Springs, of the same quality and of the same manufacture as those which they have already placed on your road, and most fo the other roads terminating in this city."

And yet Mr. Knevitt is using these experiments made upon the Springs of the Car Company to induce the public to purchase his springs, and is attempting to impose upon them the belief that the springs used were furnished by him! We ask whether such a course is honorable, or entitles his statements to much consideration from the public.

The above Springs are for sale 98 Broadway, New York, and 99 State street, Boston.

EDWARD CRANE Agent, Boston.
F. M. RAY, Agent, New York.

Boston, May 8, 1849.

STABILITY—SECURITY—PERPETUITY.

Mutual Life Insurance Co. of New York.

No. 35 WALL STREET.

A MILLION OF DOLLARS

Securely invested in Bonds and Mortgages on real estate in this city and Brooklyn, and stocks of the State and City of New York and United States Government.

The company declared a dividend of profits of fifty-two per cent. on all existing policies on the 31st of January, 1848.

All the Profits are Divided Among the Insured.

Persons may effect insurance on their own lives and the lives of others.

A married woman can insure the life of her husband, the benefits of which are secured by law for the exclusive use of herself or children.

Clergymen and all others dependent upon salaries or their daily earnings are specially invited to avail themselves of a resource whereby their surviving families may be secured from the evils of penury.

Pamphlets explanatory of the principles of Mutual Life Insurance, and illustrating its advantages, with forms of application, may be obtained at the office of the company, 35 Wall street, or of any of its agents.

TRUSTEES.

Jos. B. Collins,	Abraham Bininger,
Wm. J. Hyslop.	Alfred Edwards,
R. H. McCurdy,	Wm. Betts,
Fred. S. Winston,	Joseph Blunt,
C. W. Faber,	Isaac G. Pearson,
John P. Yelverton,	Henry Wells,
Theo. Sedgwick,	Wm. Moore,
Stacy B. Collins,	George R. Clark,
John H. Swift,	Jona. Miller,
John Wadsworth,	David A. Comstock,
S. M. Cornell,	Robert Schuyler,
Gouv. M. Wilkins,	James Chambers,
John V. L. Pruyn,	Joseph Tuckerman,
Jas. S. Wadsworth,	Moses H. Grinnell,
Charles Ely,	Wm. J. Banker,
John C. Cruger,	John M. Stuart,
Charles King,	Francis S. Lathrop,
Alfred Pell,	Nathaniel Hayden.

JOSEPH. B. COLLINS, President.
ISAAC ABBATT, Secretary. 3m9

Hydraulic Cement.

KINGSTON LIME AND CEMENT CO.
OFFICE
271 PEARL-ST.
N. Y.

HYDRAULIC CEMENT, OF BEST QUALITY, manufactured at their works, for sale in lots to suit purchasers.

Also, Ground Lime, a superior article for Builders.

ISAAC FRYER, Sec'y.

January 19, 1850. 1y

Engine and Car Works,

PORTLAND, MAINE.

THE PORTLAND COMPANY, Incorporated August 8th, 1846, with a capital of $250,000, have erected their extensive Works upon the deep water of Portland Harbor, and receive and transport, to and from their works direct, to and from vessels of any class.

They now manufacture to order, and deliver upon the Railroads running in each direction from the city, or on shipboard as wanted, Locomotive, Stationary, or Steam Boat Engines; Passenger, Mail, Freight, Earth and Hand Cars; Railway Frogs, Switches, Chairs and Castings; and every other description of Machinery.

HORACE FELTON,
Superintendent.

JAMES C. CHURCHILL,
General Agent and Clerk.

RAILROADS.

EASTERN RAILROAD.

SUMMER ARRANGEMENT.

On and after Monday, June 17th, 1850, trains will leave Boston daily (Sundays excepted);

For Lynn, 7, 9½, 11 a.m., 12 m., 2½, 4½, 5, 6, 7 p.m.
Salem, 7, 9½, 11, a.m., 12 m., 2½, 3, 4½, 6, 7 pm.
Manchester and Gloucester, 9½ a.m., 3, 6 p.m.
Marblehead, 7, 9½, 12 a.m. 2½, 4½, 6, 7 p.m.
Ipswich, 7, 11, 12 a.m., 2½, 4½, 7 p.m.
Newburyport, 7, 11, 12 a.m., 2½ 4½, 7 p.m.
Portsmouth, 7, 11 am., 4½, pm.
Portland, Me., 7, 11 am., 4½, pm.

And for Boston,

From Portland, 5, 10¾ am., 5 pm.
Portsmouth, 7½,* am., 1, 7½*, pm.
Newburyport, 6½, 8*, 1½ am., 1½*, 5, 8 pm.
Ipswich, 7·40, 8·35, 11·42 a.m. 2·20, 5·22, 8½.
Gloucester, 7½, am., 1½, 8 pm.
Manchester, 7 am., 2 pm.,
Salem, 6½, 7½*, 8½*, 9½, 10½ am., 12½*, 2½* 3,* 6*, 9*, pm.
Lynn, 6½, 7½*, 8½*, 9½, 10½ am., 12½*, 2½*, 3½ 6½*, 9½* pm.

**Or on their arrival from the East.*

Freight trains each way daily. Office 17 Merchants' Row, Boston.

JOHN KINSMAN, Superintendent.

ALBANY AND BUFFALO RAILROADS.—Four Trains daily, Sundays excepted, viz:
Leave Albany, 6 a.m., 9 a.m., 2 p.m., 7 p.m.
Reach Buffalo, 15 hours, 18 hours, 23 hours, 18 hours.
Arrive from Buffalo, 7 p.m., 2½ a.m., 12½ m., 3½ p.m.

Passengers by the *Express Train* reach Buffalo from New York, and New York from Buffalo, in 24 hours. The Isaac Newton and Oregon connect at Albany with this Train. Baggage cars, with careful baggage masters, run through with all the trains.

For Schenectady, Saratoga Springs & Whitehall,

Leave Albany at 7 a.m. and 2 p.m. For Schenectady only at 6, 7 and 9 a.m. and 12½, 2 and 7 p.m. For Erie Canal packets at 7 a.m. and 7 p.m. By Plank Road from Schenectady to Saratoga at all hours by stages, etc.

The *Eastern Trains* leave Albany at 7 a.m. and 3 p.m. The wagons of the company take baggage *free* between railroads and steamboats at Albany.

E. FOSTER, Jr., Sec'y
Albany and Schenectady Railroad Co.
Albany, August, 1849.

BOSTON AND MAINE RAILROAD.

Summer Arrangement, 1850.

Outward Trains from Boston

For Portland at 7, 11, am. and 4½ pm.
For Great Falls at 7, 11, am., 4½ pm.
For Haverhill at 7, 9, 11 am., 2½, 4½, 6½, pm.
For Lawrence (South Side,) 7, 11 am., 2½, 4½, pm.
" (North ") 7½, 9, a.m. 12m., 5, 6½, p.m.
For Reading 7, 9, 11 am. 12m. 2½, 4½, 5, 6½, 7½, 9½ pm.
The Station in Boston is on Haymarket Square.

THOS. S. WILLIAMS, Sup't.

July 1, 1850.

NEW YORK AND HARLEM RAILROAD.

NEW ARRANGEMENT.

On and after Wednesday, October 17th, 1849, the Cars will run as follows, (Sundays excepted) until further notice:

Trains will leave the City Hall, New York, for—
Harlem and Morrisania at 6½, 8, 10, 11, 12 am., 2, 3½, 4, 5, 6½ pm.
New Village, at 8½, 10, 12 am., 3½, 5, 6½ pm.
Fordham and Williams' Bridge, at 8½, 10, 12 am., 2½ 3½, 5, 6½ pm.
Hunt's Bridge, Underhill's and Hart's Corners, at 8½, 10 am., 3½, 5 pm.
Tuckahoe and White Plains, at 8½, 10 am., 2½, 3½, 5 pm.
Pleasantville, New Castle, Bedford, Mechanicsville, Purdy's, Croton Falls, and intermediate stations, on signal, 8½ am., 2½, 3½ pm.
Brewster's, Towner's, Patterson, Paulding's, South Dover, Dover Furnace, and Dover Plains, 8½ am., 2½ pm.

NOTICE—Passengers are reminded of the great danger of standing upon the platform of the cars, and hereby notified that the practice is contrary to the rules of the Company, and that they do not admit any responsibility for injury sustained by any passenger upon the platforms, in case of accident.

Returning to New York will leave
Harlem and Morrisiana at 6 08, 7½, 8 37, 9, 10 6, 12 am., 1 43, 3 07, 3½, 5, 5 47 pm.
New Village, at 5 58, 8 27, 9 56 am., 1 33, 2 57, 5 36 pm.
Fordham and William's Bridge at 5½, 8 14, 9 43, 10 57 am., 1 20, 2 44, 5 24 pm.
Hunt's Bridge at 8 04, 9 33 am., 2 34, 5 16 pm. On signal.
Underhill's, at 7 56, 9 23 a.m., 2 26, 5 10 p.m. On signal.
Tuckahoe at 7 53, 9 18, 10 40 am., 2 23, 5 08 pm.
Hart's Corners at 7 38, 9 03 am., 2 08, 4 54 pm.—On signal.
White Plains at 7½, 8 55, 10 20 am., 2, 4 47 pm.
Davis' Brook at 8 40, 10 11 am., On signal. 4 39 pm. On signal.
Unionville, 8 27, 10 11 am. On signal. 4 29 pm.—On signal.
Pleasantville at 8 20, 9 56 am., 4 24 pm.
Champaqua, at 8 10, 9 50 am. On signal. 4 18 pm. On signal,
New Castle, at 7 56, 9 38 am., 4 07 pm.
Bedford at 7 46, 9 32 am., 4 02 pm.
Mechanicsville at 7 36, 9 22 am., 3 52 pm.
Golden's Bridge, 7 28, 9 17 am. On signal, 3 47 p m. On signal.
Purdy's at 7 20, 9 09 am., 3 39 pm.
Croton Falls, at 7½, 9 04 am.,3 34 pm.
Brewster's, at 8 50 am., 3 20 pm.
Towner's, at 8 35 am., 3 05 pm.
Paterson, at 8 27 am., 2 57 pm.
Paulding's, at 8 17 am., 2 47 pm.
South Dover, 8 02 am., 2 32 pm.
Dover Furnace, 7 55 am., 2 25 pm.
Dover Plains, at 7 45 am., 2 15 pm.

The trains for Harlem and Morrisiana leaving City Hall at 6½, 8, 10, 11, 12, 2, 4 and 6½, returning from Morrisiana and Harlem at 6 08, 7½, 9, 12, 1 43, 3 07, 3½ and 5 o'clock, will land and receive passengers at 27th 42d, 51st, 61st, 79th, 86th, 109th, 115th, 125th and 132d streets.

The Dover Plains train from New York at 2½ pm., returning leaving Dover Plains at 7½ am., will not stop between White Plains and New York, (except at Tuckahoe, Williams' Bridge and Fordham,) unless to leave passengers coming from above Croton Falls.

A car will precede each train ten minutes to take up passengers in the city. The last car will not stop, except at Broome st. and 27th street.

Freight Trains leave New York at 1 o'clock pm.—Returning, leaves Dover Plains at 12 o'clock m.

For Sunday Aarrangements, see hand bills.

M. SLOAT, Sup't.

NEW YORK & ERIE RAILROAD.

Summer Arrangement, 1850.

Steamboats leave daily, Sundays excepted, from the pier foot Duane st., at 6½ a.m., and 6½ p.m., for Piermont, there connecting with the new and comfortable broad gauge cars of this road, running to Jefferson at the head of Seneca Lake in 12 hours, where passengers take the new and splendid steamer Benj. Loder for for Geneva. At Geneva they take any o the trains of the central line for Rochester, Buffalo, and the west.

Breakfast and supper on board the steamboats at each end.

Express freight trains daily over the whole road in 24 hours.

FARES.

Between New York and Buffalo,		$9 85
"	" Geneva,	6 00
"	" (second class,	4 50

CHAS. MINOT, Supt.

August 1st, 1850.

NORTHERN RAILROAD, *NEW YORK.*

CARS run between Rouses Point and Chateaugay daily, Sundays excepted, as follows:

Leave Rouses Point at . . 3½ A.M.
Leave Chateaugay at . . 6½ P.M.

On the arrival of the cars at Chataugay, stages are in readiness to take the passengers to Ogdensburg, where they arrive the same day.

Passengers leave Ogdensburg in the morning by stage, and take the evening train from Chataugay to Rouses Point, where they go immediately on board the steamboats which run north and south on Lake Champlain.

Passengers leaving New York in the evening by the way of Whitehall, will arrive at Rouses Point the next night, and the next morning pass directly from the boat to the cars, and arrive at Ogdensburg the same day. CHARLES L. SCHLATTER, Supt.

WESTERN AND ATLANTIC RAILROAD,

FROM ATLANTA, GA., TO CHATTANOOGA, TENN. 140 Miles.

PASSENGER SCHEDULE.

Leave Chattanooga daily, Sundays excepted, at 8½ a.m.
Arrive at Kingston . . . by 12 m.
" Dalton . . . by 3 p.m.
" Chattanooga . . . by 6 "
Leave Chattanooga daily, Sundays excepted, at 7 a.m.
Arrive at Dalton . . . by 9½ "
" Kingston . . . by 12 m.
" Atlanta . . . by 4 p.m.

The fare is now permanently reduced to *three* cents per mile for way as well as through Passengers; children and servants *two* cents per mile.

There are two Railroad routes from Atlanta to the Seaboard, viz: one by the Georgia Railroad to Augusta, and thence to Charleston by the South Carolina Railroad; the other by the Macon and Western Railroad to Macon, and thence to Savannah by the Central Railroad.

At Kingston, 60 miles north of Atlanta, the Rome Railroad branches off to Rome on the Coosa river, which admits of steamboat navigation as far down as Greensport in Ala. Mail stages are in operation from Rome leading towards Tuscaloosa, Ala., Columbus, Miss., Memphis, Tenn., etc.

At Dalton, 100 miles north of Atlanta, a line of stages branches off to Knoxville, Tenn., which will be superseded by the East Tennessee and Georgia Railroad as rapidly as the same is completed.

At Chattanooga a number of steamboats are in successful operation on the Tennessee river, and from that terminus of the road stages run to Nashville, which will be superseded by the Nashville and Chattanooga Railroad as rapidly as the same is completed.

WM. D. FULLTON, Supt. Transp.
Transportation W. & A. R. R.,
Atlanta, March, 1850.

GREAT NORTHERN & SOUTHERN MAIL ROUTE.

From New York to Charleston, S. C. daily, via *Philadelphia, Baltimore, Washington City, Richmond, Petersburg, Weldon and Wilmington, N. C.*

Travellers by this route, leaving New York at 4½ p. m., Philadelphia at 10 p.m., and Baltimore at 6 a.m., proceed without delay at any point on the route, arriving at Richmond, Va., in a day, and at Charleston, S. C., in two and half days from New York.

Through tickets from New York to Charleston, $20 00
" " Baltimore to Richmond, 7 00
" " " " Petersburg, 7 50

For tickets to Richmond and Petersburg, or further information, apply at the *Southern Ticket Office, adjoining the Washington Railroad Ticket Office, Pratt Street, Baltimore.* STOCKTON & FALLS.

LITTLE MIAMI RAILROAD.—SUMMER ARRANGEMENT.

Cincinnati and Sandusky.

FIRST Passenger Train leaves Depot on East Front street, at 5 o'clock 10 minutes A. M. stops for breakfast at Morrow, and arrives at Springfield at 11 10 A M. Leaves Springfield for Sandusky at 11 50 A. M.

Second Passenger Train leaves Depot 3 P. M. arrives at Springfield at 9 P.M. Passengers take tea at Springfield, and leaves for Sandusky at 9½ P. M.

RETURNING—First Train leaves Springfield at 4 A. M. Stop for breakfast at Xenia, and arrives at Cincinnati at 10 15 A. M.

Second Train leaves Springfield at 2½ P. M. Stop for tea at Morrow, and arrives at cincinnati, at 8½ P. M.

Passengers taking the Morning Train arrive at Sandusky at 9 P. M. Those taking the Afternoon Train arrive at 7½ A. M. next morning, and proceed directly on in the boats.

Passengers for columbus, Zanesville, Wheeling, and intermediate towns, should take the 5, 10 A. M., Train.

The Ohi Stage Company are running the following Lines in connection with the Trains:

A Daily Daylight Line to Columbus from Springfield in connection with the Morning Train from Cincinnati. Also, Daily Lines to Columbus, from Xenia and Springfield, connecting with the 3 o'clock pm. train from Cincinnati.

Fare from Cincinnati to	Xenia . .	$1 90
" "	Springfield . .	2 50
" "	Sandusky city .	6 50
" "	Buffalo . .	10 00
" "	Columbus . .	4 50

For other information and through tickets, apply at the Ticket Office on Broadway, near Front-st., Cincinnati.

W. H. CLEMENT, Superintendent.

☞ The Company will not be responsible for Baggage exceeding 50 dollars in value, unless the same is returned to the Conductors or Agent, and freight paid at the rate of a passage for every 500 dollars in value above that amount.

PHILADELPHIA, WILMINGTON, & BALTIMORE RAILROAD.

Summer Arrangement.
April 1st, 1849.—Fare $3.

Leave Philadelphia 8½ am., and 10 pm.
Leave Baltimore 9 am, and 8 pm.
Sunday—Leave Philadelphia at 10 pm.
" Baltimore at 8 pm.
Trains stop at way stations.

Charleston, S. C.

Through tickets Philadelphia to Charleston, $20.

Pittsburg and Wheeling.

Through ticket, Philadelphia to Pittsburg, $12.
" " Wheeling, 13.
Through tickets sold at Philadelphia office only.

Wilmington Accommodation.

Leave Philadelphia at 12 m. 4 and 7 pm.
Leave Wilmington at 7½ am., 4½ and 7 pm.

Newcastle Line.

Leave Philadelphia at 2½ pm.—Baltimore at 1½ pm
Fare $3.—Second class, $2.
N.B.—Extra baggage charged for.

I. R TRIMBLE, Gen. Supt.

BALTIMORE AND SUSQUEHANNA RAILROAD.—Reduction of Fare.

Morning and Afternoon Trains between Baltimore and York.—The Passenger Trains run daily, except Sundays, as follows:

Leave Baltimore at	9 am. and 3½ pm.
Arrive at	9 am. and 6½ pm.
Leave York at	5 am. and 3 pm.
Arrive at	12½ pm. & 8 pm.
Leave York for Columbia at	1½ pm. & 8 am.
Leave Columbia for York at	8 am. & 2 pm.

Fare:

Fare to York	$1 50
" Wrightsville	2 00
" Columbia	2 12½

Way points in proportion.

PITTSBURG, GETTYSBURG, AND HARRISBURG.

Through tickets to Pittsburg via stage to Harrisburg - - - - - - $9
Or via Lancaster by railroad - - - 10
Through tickets to Harrisburg or Gettysburg - 3
In connection with the afternoon train at 3½ o'clock, a horse car is run to Green Spring and Owing's Mill, arriving at the Mills at - 5½ pm.
Returning, leaves Owing's Mills at - 7 am.

D. C. H. BORDLEY, Sup't.
31 1y Ticket Office, 63 North st.

PHILADELPHIA & READING RAILROAD

Passenger Train Arrangement for 1850.

A Passenger Train will leave Philadelphia and Pottsville daily, except Sundays, at 9 o'clock a.m.

The Train from Philadelphia arrives at Reading at 12 18 m.

The Train from Pottsville arrives at Reading at 10 43 a.m.

Fares.	Miles.	No.1.	No.2.
Between Philad. and Pottsville,	92	$3·50 and	$3·00
" " Reading,	58	2·25	1·90
" Pottsville "	34	1·40	1·20

Five minutes allowed at Reading, and three at other way stations.

Passenger Depot in Philadelphia corner of Broad and Vine streets. 8tf.

BALTIMORE AND OHIO RAILROAD AND WASHINGTON BRANCH.

On and after January 1, 1850, Passenger Trains will run as follows:

Leave Baltimore for Ellicott's Mills, Frederick, Harper's Ferry, Martinsburg, Hancock and Cumberland, every morning at 7½ o'clock. This line carries the Great Mail, and connects with Post Coaches at Cumberland, for Wheeling and Pittsburg, over the National Road. Also with the Winchester Trains, at Harper's Ferry. N.B.—Passengers for Pittsburg take the steamers of the Monongahela slack water navigation at *Brownsville*, only 76 miles from Cumberland.

Leave Baltimore for Ellicott's Mills, Frederick and Harper's Ferry, daily, except Sunday, at 4½ p.m.

Leave Baltimore for Washington City, daily, at 6 a.m. and 5 p.m.—daily, except Sunday, at 9 a.m. The early train connects with the Great Southern Line, via Fredericksburg and Richmond, to Charleston.

Leave Cumberland for Baltimore, etc., at 8½ a. m., daily, connecting with the train from Winchester at Harper's Ferry—with the Evening Train to Washington City, at the Relay House—and with the Evening Train to Philadelphia, at Baltimore. Time for arriving at Baltimore, 5½ p.m.

Leave Harper's Ferry for Baltimore, daily, except Sunday, at 7½ a. m—taking in Passengers who leave Frederick at 8½ a.m.

Leave Washington for Baltimore, daily, at 6 a.m. & 5½ p.m., and *daily, except Sunday*, at 9½ a. m. The early train connects at the Relay House with the morning line to Cumberland and the West, and at Baltimore with the day line to Philadelphia and New York.

Through tickets are sold at *Philadelphia and Baltimore* for Pittsburgh and Wheeling, and at *Philadelphia and New York* for Charleston, S. C., at the following

RATES OF FARE.

	To Pittsburg. In winter.	Summer.	Wheeling. Win.	Sum.	Charleston.
From Philadelphia,	$13	$12	$14	$13	$20
" Baltimore,	11	10	12	11	
" New York,	.	.	.	.	20

Passengers leaving New York not later than the afternoon line via Newark, etc., reach Baltimore in season to take the next morning's lines to the South and West.

Passengers leaving Cumberland in the morning and Washington in the evening lines, reach Baltimore in season to proceed to Philadelphia by the evening train at 8 p. m.—so as to reach New York before noon the next day.

An Emigrant line by burthen cars, leaves Baltimore every morning, except Sundays, at 4 o'clock—connecting with a line of the previous day from N. York—and at Cumberland with a wagon line to Pittsburg or Brownsville and Wheeling. Fare by this line:

From New York to Pittsburg,	$8 00
" Philadelphia "	6 50
" Baltimore "	5 00

By order, J. T. ENGLAND, Agent.

SOUTH CAROLINA RAILROAD.—A PASSENGER

Train runs daily from Charleston, on the arrival of the boats from Wilmington, N. C., in connection with trains on the Georgia, and Western and Atlantic Railroads—and by stage lines and steamers connects with the Montgomery and West Point, and the Tuscumbia Railroad in N. Alabama.

Fare through from Charleston to Montgomery daily - - - - - $26 50
Fare through from Charleston to Huntsville, Decatur and Tuscumbia - - - 22 00

The South Carolina Railroad Co. engage to receive merchandize consigned to their order, and to forward the same to any point on their road; and to the different stations on the Georgia and Western and Atlantic Railroad; and to Montgomery, Ala., by the West Point and Montgomery Railroad.

JOHN KING, Jr., Agent.

FAIRBANKS' RAILROAD SCALES.—THE subscribers are prepared to construct at short notice, *Railroad* and *Depot Scales*, of any desired length and capacity. Their long experience as manufacturers—their improvements in the construction of the various modifications, having reference to strength, durability, retention of adjustment, accuracy of weight and dispatch in weighing—and the long and severe tests to which their scales have been subjected—combine to ensure for these scales the universal confidence of the public.

No other scales are so extensively used upon railroads, either in the United States or Great Britain;—and the managers refer with confidence to the following in the United States.

Eastern Railroad.	Boston & Maine Railroad.
Providence Railroad.	Providence and Wor. Road.
Western Railroad.	Concord Railroad.
Old Colony Railroad.	Fitchburg Railroad.
Schenectady Railroad.	Syracuse and Utica Road.
Balt. and Ohio Railroad.	Baltimore and Susq. Road.
Phila. & Reading Road.	Schuylkill Valley Road.
Central (Ga.) Railroad.	Macon and Western Road.

New York and Erie Railroad.

And other principal Railroads in the Western, Middle and Southern States.

E. & T. FAIRBANKS & CO.
St. Johnsbury, Vt.

Agents, { FAIRBANKS & Co., 89 Water St., N. York. / A. B. NORRIS, 196 Market St. Philadelphia.

April 22, 1849. 1y*17

NOTICE TO

Superintendents of Railroads.

TYLER'S PATENT SAFETY SWITCH.—The undersigned would respectfully call their attention to his Patent Safety Switch, which from long trial and late severe tests has proved itself perfectly reliable for the purpose for which it was intended. It is designed to prevent the train from running off when the switch is set to the wrong track by design or accident. The single rail or gate switch is established as the best and safest switch for the ordinary purpose of shifting cars from one track to another, but it is liable to the serious evil of having one track open or broken when connected with the other. My improvement entirely removes this evil, and while it accomplishes this important office, leaves the switch in its original simplicity and perfection of a plain unbroken rail, connecting one track with the other ready for use.

The following decision of the Commissioner of Patents is respectfully submitted to Railroad Engineers, superintendents, and all others interested in the subject.

P. B. TYLER.

(COPY.)

UNITED STATES PATENT OFFICE, Washington City, D.C., April 28th, 1846.

SIR: You are hereby informed that in the case of the interference between your claims and those of Gustavus A. Nicolls, for improvements in safety switches—upon which a hearing was appointed to take place on the 3d Monday in March, 1846, the question of priority of invention has been decided in your favor. Inclosed is a copy of the decision. The testimony in the case is now open to the inspection of those concerned.

Yours respectfully, EDMUND BURKE, Commissioner of Patents.

To Philos B. Tyler.

Any further information may be obtained by addressing P. B. TYLER, Springfield, Mass., or JOHN PENDLETON, Agent, 149 Hudson St., New York.

NORRIS' LOCOMOTIVE WORKS,
SCHENECTADY, N. Y.

THESE Works are in full operation in Manufacturing to order, Locomotive Steam Engines & Tenders, of the best principle and construction of material, using wrought iron heavy frames with pedestals welded thereto, and all parts of the engine made of the best wrought iron, except cylinders, pumps and boxes—obtaining greater durability, and carrying less weight over the road, than engines constructed of cast iron.

Wrought Iron Tires made any required size, and Tire Bars bent and welded with dispatch.

Chilled Wheels for Cars, Tucks and Tenders, made from the toughest iron.

Driving and Tender and Car Wheels fitted to Axles with Brass Boxes and Springs, and Railroad Machinery generally. Manufactured and for sale by

April 11, 1849. E. S. NORRIS.

CORROSIVE SUBLIMATE.

THIS article now extensively used for the preservation of timber, is manufactured and for sale by POWERS & WEIGHTMAN, manufacturing Chemists, Philadelphia.

Jan. 20, 1849.

CENTRAL RAILROAD FROM SAVANNAH TO MACON, (Ga.) 190¼ miles.

Passenger Trains leave Savannah and Macon daily at 7 a.m.

Passenger trains arrive daily at Savannah, 6 15 p.m.
" " " " Macon, 6 45 p.m.

This road, in connection with the Macon and Western road from Macon to Atlanta, and the Western and Atlantic road from Atlanta to Dalton, now forms a continuous line of 391¼ miles in length* from Savannah to Dalton, Murray county, Ga. and with the Memphis Branch railroad, and Stages connect with the following places:

Tickets from Savannah to Macon,		$5 75
" " "	Atlanta,	9 50
" " "	Augusta,	6 50
" " "	Columbus,	15 00
" " "	Opelika,†	17 00
" " "	Jacksonville, Ala.,	20 00
" " "	Talladega, Huntsville Ala., Decatur,	22 00
" " "	Tuscumbia, Ala.,	22 50
" " "	Tuscaloosa, Ala.,	
" " "	Columbus, Miss, Aberdeen, " Holly Springs	28 00
" " "	Nashville, Tenn. Murphreesboro'	25 00
" " "	Columbia, do.,	
" " "	Memphis, do.,	30 00

An extra Passenger Train leaves Savannah on Saturdays, after the arrival of the Steam-ships from New York, for Macon, and connects with the Macon and Western railroad; and on Tuesdays, after the arrival of the Macon and Western cars, an extra Passenger Train leaves Macon to connect with the Steam ships for New York

Stages for Tallahasse and intermediate places connect with the road at Macon, Mondays, Wednesdays, and Fridays, and with Milledgeville at Gordon daily.

Passengers for Montgomery, Mobile and New Orleans take stage for Opelika from Barnesville through Columbus, a distance of 97 miles, or from Griffin thro' West Point, a distance ot 93 miles.

* The Western and Atlantic railroad will soon be completed between Dalton and Chattanooga, a distance of 423¼ miles from Savannah, of which due notice will be given.

† Head of the West Point and Montgomery railroad, on which the fare to Montgomery is about $2.

RATES OF FREIGHT FOR MERCHANDIZE GENERALLY, FROM SAVANNAH TO MACON.

Measurement Goods.—Boxes of hats, bonnets, furniture, shoes, saddlery, dry-goods, and other measurement goods, per cubic foot - - 13 cents.
Crockery Ware, in crates, boxes or hhds, per cubic foot. - - - - 10 "
Goods by Weight, 1st class.—Boxes of glass, paints, drugs & confectionary, per 100 lbs., 50 "
2d class—Sugar, coffee, rope, butter, cheese, lard, tobacco, leather, hides, copper, sheet and hoop iron, tin, hard and hollow ware, rice, boxes soap and candles, bagging, and other heavy articles not enumerated below, per 100 lbs., - - - - 45 "
3d class—Flour, bacon, liquors, pork, beef, fish, tallow and beeswax, per 100 lbs., 40 "
4th class—Mill-gearing, pig and bar iron, grind and millstones, nails, spikes and coal, 100 lb. 30 "
Barrels of beets, bread, crackers, potatoes, ice, fruit, oysters, onions, and all light bbls, each, 75 "
Oil and molasses per hhd., (smaller casks in proportion) - - - $6 00 "
Salt per sack not exceeding 4 bushels, - 50 "

☞ Goods consigned to Thos. S. Wayne, Forwarding Agent, Savannah, will be forwarded free of commission. WM. M. WADLEY, Supt.

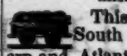
Savannah, Ga., February 24, 1850.

ENGINEERS' AND SURVEYERS'
INSTRUMENTS MADE BY
EDMUND DRAPER,
Surviving partner of
STANCLIFFE & DRAPER.

No 23 Pear street, near Third, below Walnut, Philadelphia.

GEORGIA RAILROAD. FROM AUGUSTA TO ATLANTA—171 MILES.

AND WESTERN AND ATLANTIC RAILROAD, FROM ATLANTA TO DALTON, 100 MILES.



This Road, in connection with the South Carolina Railroad, and Western and Atlantic Railroad, now forms a continuous line, 408 miles in length, from Charleston to Dalton Cross Plains) in Murray county, Ga. 32 miles from Chattanooga, Tenn.

RATES OF FREIGHT.		Between Augusta and Dalton. 271 miles.	Between Charleston, and Dalton. 408 miles.
1st class	Boxes of Hats, Bonnets, and Furniture, per cub-foot - -	$0 18	$0 28
2d class	Boxes and Bales of Dry Goods, Saddlery, Glass, Paints, Drugs, and Confectionary, per 100 lbs.	1 00	1 50
3d class	Sugar, Coffee, Liquor, Bagging, Rope, Cotton, Yarns Tobacco, Leather, Hides, Copper, Tin, Feathers, Sheet Iron, Hollow ware, Castings, Crockery, etc.	0 60	0 85
4th class	Flour Rice, Bacon, Pork, Beef, Fish, Lard, Tallow, Beeswax, Bar Iron, Ginseng, Mill Gearing, Pig Iron, and Grindstones, etc. - - -	0 40	0 65
	Cotton, per 100 lbs. -	0 45	0 70
	Molasses per hogshead -	8 50	13 50
	" " barrel - -	2 50	4 25
	Salt per bushel - -	0 18	
	Salt per Liverpool sack -	0 65	
	Ploughs, Corn Shellers, Cultivators, Straw Cutters, Wheelbarrows - -	0 75	1 50

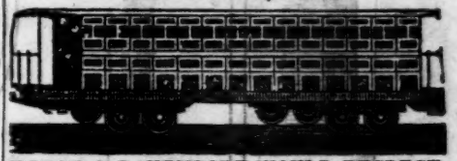
German or other emigrants, in lots of 20 or more, will be carried over the above roads at 2 cents per mile.

Goods consigned to S. C. Railroad Company will be forwarded free of commissions. Freights payable at Dalton.

F. C. ARMS, Sup't of Transportation.

44*1y

CAR MANUFACTORY
CINCINNATI, OHIO.



KECK & DAVENPORT WOULD RESPECTfully call the attention of Railroad Companies in the West and South to their establishment at Cincinnati. Their facilities for manufacturing are extensive, and the means of transportation to different points speedy and economical. They are prepared to execute to order, on short notice, Eight-Wheeled Passenger Cars of the most superior description. Open and Covered Freight Cars, Four or Eight-Wheel Crank and Lever Hand Cars, Trucks, Wheels and Axles, and Railroad Work generally.

Cincinnati, Ohio, Oct. 2, 1848. 44ti

NICOLL'S PATENT SAFETY SWITCH FOR Railroad Turnouts. This invention for some time in successful operation on one of the principal railroads in the country, effectually prevents engines and their trains from running off the track at a switch, left wrong by accident or design. It acts independently of the main track rails; being laid down or removed without cutting or displacing them.

It is never touched by passing trains, except when in use, preventing their running off the track. It is simple in its construction and operation, requiring only two castings and two rails; the latter, even if much worn or used, not objectionable.

Working models of the Safety Switch may be seen at Messrs. Davenport, Bridges & Kirk's Cambridge Port, Mass., and at the office of the Railroad Journal, New York.

Plans, Specifications, and all information obtained, on application to the Subscriber, Inventor and Patentee.

G. A. NICOLLS, Reading, Pa.

FOWLER M. RAY'S
METALLIC INDIA RUBBER CAR SPRINGS.

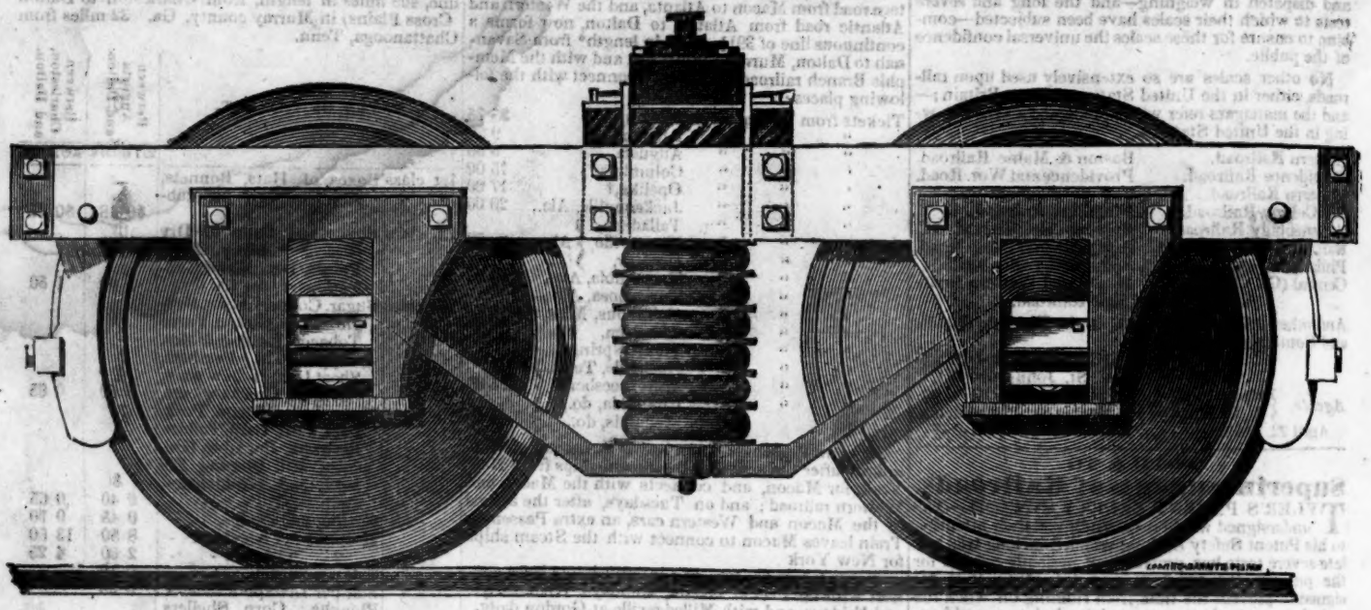


Fig. 1.

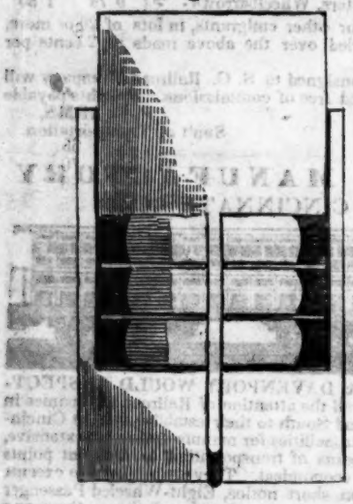


Fig. 2.

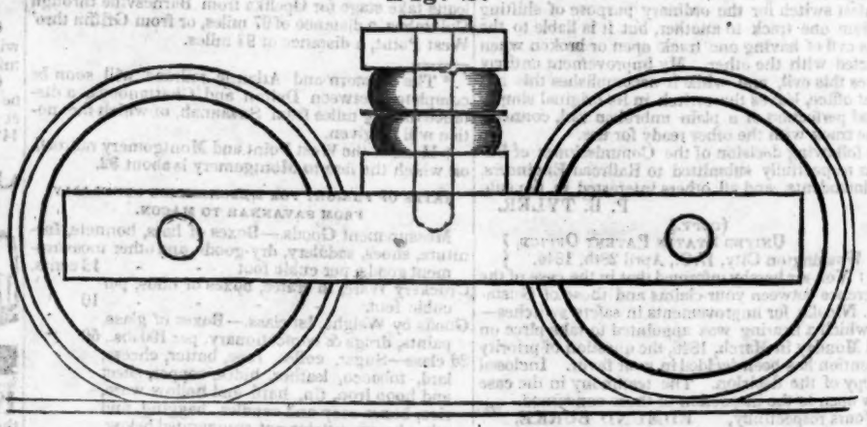
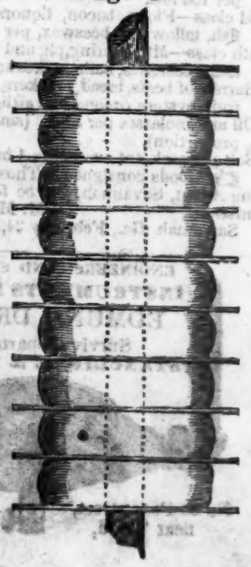


Fig. 3.



So much has been published for the purpose of misleading the public in regard to the inventorship of the India-rubber Railroad Spring, patented in the United States by Mr. W. C. Fuller, that the New England Car Company, proprietors of this invention, have deemed it proper, for the information of Railroad Companies, Car Builders and the public generally, to lay before them the facts upon which they found their claim to this invention, and to a Patent therefor.

Cut No. 1, Represents a cross section of the first model made by Mr. Tucker, under the direction of Mr. Ray, in the summer of 1844, and to which Mr. Tucker, Mr. Bradley and Mr. Bannester testify as being the model marked "B."

Cut No. 2, Represents the model made in 1845, to which Mr. Osgood Bradley and Gen. Thos. W. Harvey have testified.

Cut No. 3, Represents a rough sketch made by Mr. Ray in 1844, which he gave to a man about departing for England to take out some patents, who promised to write to Ray after his arrival in that country—which promise he has probably forgotten.

Mr. W. C. Fuller, of England, patented the above Spring in that country on the 23d October, 1845. He filed his enrollment April 23d, 1846, and on the 22d October, 1846, he took out a patent in the United States under the title, "For Improvement in Railway Carriages," when the improvement consisted in the spring, and not in the carriage.

The reader will perceive by the annexed testimony, that the India-rubber Railroad Car Spring was invented by Mr. Ray about two years previous to the date of Mr. Fuller's enrollment.

The Depositions are omitted for want of room, but will be published in full in the course of a few weeks.

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